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Eliminating the Suffering and Death Due to Cancer

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STAR Results: Raloxifene as Effective as Tamoxifen, Better Safety Profile

The long-awaited results of the largest breast cancer chemoprevention trial ever conducted provide what its leaders say is excellent news: Regular use of the anti-osteoporosis drug raloxifene (Evista) works just as well as tamoxifen at reducing breast cancer risk in postmenopausal women at high risk, but appears less likely to cause some of the potentially dangerous side effects seen with tamoxifen use.

"These results demonstrate that raloxifene represents an effective alternative for postmenopausal women at increased risk of breast cancer," said Dr. D. L. Wickerham, associate chairman of the National Surgical Adjuvant Breast and Bowel Project (NSABP), which coordinated the Study of Tamoxifen and Raloxifene (STAR).

The STAR results, added Dr. Leslie Ford, associate director for clinical research in NCI's Division of Cancer Prevention, "have immediate implications for how women view their breast cancer risk and what they can do about it. They will make breast cancer prevention more of a reality for many women."

More than 19,000 postmenopausal women participated in the NCI-

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Director's Update

Dr. Sanya Springfield, Acting Director, Center to Reduce Cancer Health Disparities

Guest Update by Dr. Sanya Springfield

Minority Cancer Awareness Week: A Time to Reflect

Each year, we learn more about the devastating impact of cancer on minority communities. Whether it is the burden of one type of cancer on a particular minority population, or disproportionate mortality when comparing minorities with whites, cancer disparities exact a huge toll on society. As long as these disparities exist, our work to eliminate suffering and death due to cancer is far from complete.

That is why overcoming cancer health disparities remains one of NCI's strategic priorities as well as one of the best opportunities we have for making an impact on cancer. The strategy calls for understanding the factors that cause cancer health disparities, working with communities to develop targeted interventions, developing interventions to enhance the integration of services for underserved populations, and working to develop a cadre of researchers and clinicians who can effectively address cancer disparities.

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(STAR Results continued from page 1)
sponsored STAR clinical trial. Participants were randomly assigned to receive 60 mg of raloxifene or 20 mg of tamoxifen every day for 5 years. All of the women in the trial were considered at increased risk for breast cancer based on several criteria, including family history and their personal medical history.

The rates of invasive breast cancers were nearly equivalent in participants on raloxifene and those on tamoxifen: 167 breast cancers among the 9,745 women on raloxifene compared with 163 cases among the 9,726 women taking tamoxifen.

The STAR trial may very well change the landscape of breast cancer chemoprevention, Dr. Ford said. Despite the 50-percent reduction in breast cancer risk among women who took tamoxifen in the Breast Cancer Prevention Trial (BCPT), its adoption rate as a chemopreventive outside of clinical trials has been sluggish. The slow uptake has been mostly attributed to concerns about the side effects seen in the BCPT participants on tamoxifen, including an increased risk of uterine cancers, primarily endometrial cancer, and vascular side effects such as a pulmonary embolism (a blood clot in the lungs) and deep-vein thrombosis (blood clots in major veins).

In STAR, however, there was a 36-percent reduction in uterine cancers in women on raloxifene compared with those on tamoxifen. (More than half the women who joined STAR had had a hysterectomy and therefore were not at risk for uterine cancer.) While the reduction did not achieve statistical significance, Dr. Wickerham notes, numerous studies comparing raloxifene to placebo have shown no increase in endometrial cancers.

In addition, women in the raloxifene group had almost 30 percent fewer deep-vein thromboses and pulmonary embolisms than women in the tamoxifen group.

Because tamoxifen has long been used for cancer treatment, Dr. Ford notes, that may have raised flags in many clinicians' minds about using it to prevent cancer.

"I think primary care physicians, gynecologists, and internists were somewhat uncomfortable with tamoxifen, despite its extensive safety profile," she says. "But raloxifene has been used by gynecologists and family practice physicians for preventing osteoporosis, so they may be more comfortable prescribing it."

Raloxifene, which, like tamoxifen, is a selective estrogen receptor modulator, or SERM, has not been approved by the FDA for use in breast cancer chemoprevention. Yesterday, however, the drug's manufacturer, Eli Lilly, issued a statement saying it would request the agency's approval to market raloxifene for the prevention of invasive breast cancer in postmenopausal women.

"Tamoxifen is still an incredibly effective drug and it's the only drug currently approved for breast cancer chemoprevention, and that includes in premenopausal women," says Dr. Wickerham. "The discussion about whether women should switch to raloxifene needs to be between each patient and her doctor." ◆

By Carmen Phillips

(Director's Update continued from page 1)
This week, two events remind us of the challenges that remain. The first is National Minority Cancer Awareness Week, observed April 16–23. This is a time to reflect on how far we have come in addressing the unequal burden of cancer on minority populations and how far we have yet to go. It also presents an opportunity for the cancer community to rededicate ourselves to ensuring that all segments of the population are benefiting from cancer research advances. Quite simply, it is a time to realign ourselves with the goal of equal cancer care.

The second notable event this week is the 10th Biennial Symposium on Minorities, the Medically Underserved & Cancer, in Washington, D.C., April 19–23. Sponsored jointly by the Intercultural Cancer Council and Baylor College of Medicine, this conference will provide participants with an opportunity for an exchange of information and ideas in plotting the course of future investigation on cancer disparities.

The symposium will feature a series of briefings about cancer disparity reduction strategies and progress, including findings from a commission on diversity in the health care workforce, and an update on the 2-year-old Trans-HHS Cancer Health Disparities Progress Review Group.

The contrast in cancer status between minorities and whites—especially in terms of survivorship—has never been more stark. While the nation has experienced its first-ever decline in cancer deaths from 1991–2002, there are wide differences in survival in terms of race and ethnicity. Asian/Pacific Islander women are the only minority group with a lower risk of death from all cancer sites combined than white men and women. African Americans have the highest overall cancer incidence and mortality rates when compared with other segments of the population. People are living longer with a cancer diagnosis, but clearly the benefits of significant progress in cancer prevention, early detection, and treatment are being

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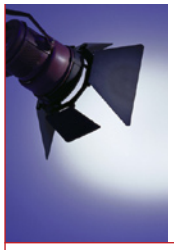

Spotlight

NCI's Developmental Therapeutics Program: Turning Molecules into Medicine

The drug bortezomib (Velcade), the first new treatment for multiple myeloma in a decade, is an example of how researchers in the Developmental Therapeutics Program (DTP) of NCI's Division of Cancer Treatment and Diagnosis (DCTD) are working with academic scientists, clinicians, and companies to facilitate the discovery and development of new and effective therapies for cancer.

Multiple myeloma is a malignant proliferation of plasma cells, of which there were an estimated 16,000 new cases in the United States in 2005. About 11,300 people died of the disease in 2005. Multiple myeloma is the second most common blood cancer, representing about 1 percent of all cancers.

Plasma cells typically make up about 1 percent of the cells in the bone marrow, but multiple myeloma tumor cells are overproduced and can account for 10 to 80 percent of the cells in the bone marrow, crowding out the normal bone marrow cells. The malignant myeloma cells remain mainly within the bone marrow, destroying bone and causing fractures and severe pain. Despite advances in therapy that improve the quality and length of life, the disease remains incurable. The survival rate for multiple myeloma patients is approximately 5 years.

In 1994, Dr. Julian Adams was working for a small biotech company when his research group discovered a potent inhibitor of proteasomes—structures within cells that act like garbage disposals, chewing up abnormal or damaged proteins so they cannot obstruct the normal workings of the cell. Inhibiting the proteasome causes proteins that would normally be destroyed to accumulate in a cell. Normal cells can typically withstand a reduction in protein breakdown; myeloma cells are more sensitive to the accumulation of these proteins and rapidly undergo cell death, or apoptosis.

Targeting the proteasome for cancer treatment was initially met with skepticism, and Dr. Adams needed to convince the scientific community that his idea was credible. He met with members of DTP in 1995 to discuss further development of bortezomib. DTP scientists agreed that the proteasome was a novel therapeutic target and that further research was needed to validate it as a viable target.

From 1995 to 1997, DTP supported cell line and animal studies that showed that bortezomib effectively inhibited the growth of cancer cells. As a result, in 1998 DCTD agreed to provide support for phase I testing of the compound.

"DTP improved the chance that bortezomib would be moved to clinical trials earlier through our efficacy and toxicology studies and the development of a stable formulation for the drug," said Dr. Joe Tomaszewski, DCTD deputy director. "Through the combined experience of DTP and the Cancer Therapy Evaluation Program (CTEP), we were able to facilitate the process of clinical trials approval and placement for this unique agent."

In 2000, phase I studies showed that multiple myeloma was susceptible to treatment with bortezomib and a phase II study quickly followed. These clinical trial results prompted the FDA to place bortezomib on a fast track for review. In 2003, bortezomib was approved for treatment of patients with myeloma who had not responded to at least two previous therapies. Bortezomib represents a new mechanistic class of cancer agent for treatment of multiple myeloma and is currently being investigated as a therapy in other types of cancer.

"CTEP has sponsored more than 60 early-phase clinical trials to evaluate the activity of bortezomib in a variety of solid tumors and hematological malignancies," said Dr. John Wright, of CTEP's Investigational Drug Branch. "We have found that bortezomib appears to be effective in the treatment of additional tumor types including non-Hodgkin lymphomas as well as lung cancers. Evaluation in these tumors and others is ongoing.

"This is a great example of how DTP played a pivotal role in preclinical testing of bortezomib, providing the drug for testing in collaboration with the clinical development program supported by CTEP to identify its effectiveness in tumor types other than multiple myeloma," Dr. Wright concluded. ◆

By Lynette Grouse

Cancer Research Highlights

Estrogen-Only Treatment Does Not Increase Breast Cancer Risk

Postmenopausal women who have had hysterectomies and undergone long-term therapy with estrogen were not found to have an increased risk of developing breast cancer, according to a study published in the April 12 *Journal of the American Medical Association*. The study was sponsored by the National Heart, Lung, and Blood Institute (NHLBI).

The finding came from the Women's Health Initiative (WHI) Estrogen-Alone Trial of more than 10,000 healthy women who received either estrogen or placebo. After an average 7 years of follow-up, the study found slightly lower rates of breast cancer in the estrogen group compared with the placebo group, although the differences were not statistically significant. The women receiving estrogen did experience greater rates of abnormal mammography findings and biopsies than the placebo group.

This is in contrast to earlier results from the WHI Estrogen plus Progestin study, which was stopped in 2002 because of an increased risk of breast cancer. The WHI Estrogen-Alone Trial was stopped in 2004 because of increased stroke risk, but the effects on invasive breast cancer were deemed uncertain at the time. Subsequent analyses concluded that treatment with estrogen alone for 7.1 years does not increase breast cancer incidence in postmenopausal women with prior hysterectomy.

"Longer follow-up is needed to fully explain the reduced number of breast cancers in women taking estrogen," said NHLBI and WHI Director Dr. Elizabeth G. Nabel. "However, this new analysis does not alter the overall conclusion from the WHI that hormones, including estrogen alone and estrogen plus progestin, should not be used for the prevention of chronic disease" such as coronary heart disease, cancer, or osteoporosis.

Discovery Shows How Kaposi's Sarcoma Virus Enters Cells

Researchers have discovered a protein on the surface of some human cells that is used by the Kaposi's sarcoma herpesvirus (KSHV) to enter the cells. This virus is a necessary factor in the development of Kaposi's sarcoma, a cancer that occurs most often in people with HIV/AIDS and certain types of lymphoma. The newly identified protein is called xCT.

Drs. Johnan Kaleeba and Edward A. Berger of the National Institute of Allergy and Infectious Disease found that KSHV can infect a broad range of cell types in different species. The researchers hypothesized the existence of a protein on the cell surface that is distinct from molecules previously implicated in the attachment and entry process of KSHV infection.

After identifying xCT, Drs. Kaleeba and Berger confirmed its role in KSHV infection experimentally. They showed first that antibodies against xCT prevented the virus from entering cells that would normally allow entry. They also showed that stimulating the production of xCT in cells that were otherwise not susceptible to infection resulted in infection, according to findings in the March 31 *Science*.

An intriguing finding noted in the *Science* paper is the possibility that xCT is part of a pathogenic mechanism by which KSHV induces or exploits physiologic responses in human cells to its own benefit. For instance, the virus might influence a cell's production of xCT to allow itself greater access to the cell.

Inadequate Screening Is Linked to Breast Cancer Disparities

A study published April 18 in the *Annals of Internal Medicine* confirms that the higher incidence of advanced breast tumors among African American women compared with white women may be explained in part by inadequate mammographic screening—the women were 55 or older the first time they were screened, or they had waited more than 42 months between mammograms, or they had never been screened. African American women with the same screening history as other women were no more likely to have large or advanced-stage tumors.

Previous research based on women's recollections suggested that minority women tend to have higher mortality from breast cancer because they are less likely to get mammograms and they get them later than white women. In the current study, the researchers used data collected through the NCI-funded Breast Cancer Surveillance Consortium to ascertain the mammographic history and cancer outcomes of more than a

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(Highlights continued from page 4)
million women over the age of 40. All women had at least one mammogram during the period analyzed.

Though there were no differences in stage and tumor size among African American and other women when screening history was the same, there were differences within tumors themselves. The researchers found that African American women had a disproportionate number of high-grade tumors compared with white women, regardless of screening frequency. The nonwhite women in the study also were more likely to receive inadequate screening before their breast cancer diagnosis: 34 percent of African American, 24 percent of Hispanic, and 27 percent of Native American women, compared with 18 percent of white women.

"This is an example where the story is more complicated than we would like; the higher risk of breast cancer mortality among African American women can be partially addressed by increased screening, but we need to know more about the biology as well," says Dr. Rachel Ballard-Barbash, associate director of the Applied Research Program in NCI's Division of Cancer Control and Population Sciences and co-author of the study. ◆

(Director's Update continued from page 2)
felt unevenly across society.

I hope we can use this week to re-establish our commitment to ending cancer health disparities. Most importantly, let all of us in the cancer community find a way to become fully engaged as we work to eliminate suffering and death for all persons facing cancer. ◆

Funding Opportunities

Research on Social Work Practice and Concepts in Health

Announcement Number: PA-06-234
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1, June 1, and Oct. 1, 2008; Feb. 1, 2009.

This funding opportunity will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3379. Inquiries: Dr. Suzanne Heurtin-Roberts—sheurtin@mail.nih.gov

Research on Sleep and Sleep Disorders

Announcement Number: PA-06-238
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1 and June 1, 2008.

This funding opportunity will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3378. Inquiries: Dr. Ann O'Mara—ao45s@nih.gov

Endoscopic Clinical Research in Pancreatic and Biliary Diseases

Announcement Number: PAR-06-171
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1, June 1, and Oct. 1, 2008; Feb. 1, 2009.

This is a renewal of PAR-03-033 and will use the R-03 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3373. Inquiries: Dr. William F. Anderson—wa31i@nih.gov

Mentored Patient-Oriented Research Award to Promote Diversity

Announcement Number: PAR-06-222
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1, June 1, and Oct. 1, 2008; Feb. 1, 2009.

This is a renewal of PAR-03-006 and will use the K23 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3374. Inquiries: Belinda M. Locke—lockeb@mail.nih.gov

Interactions between Stem and Progenitor Cells and the Microenvironment

Announcement Number: PAS-06-207
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1, 2008.

This is a renewal of PAS-05-092 and will use the R03 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3375. Inquiries: Dr. R. Allan Mufson—am214t@nih.gov

Interactions between Stem and Progenitor Cells and the Microenvironment

Announcement Number: PAS-06-208
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1, 2008.

This is a renewal of PAS-05-092 and will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3376. Inquiries: Dr. R. Allan Mufson—am214t@nih.gov

The Secretory Pattern of Senescent Cells

Announcement Number: PA-06-138
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1 and June 1, 2008.
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(Funding Opportunities continued from page 5)

This is a renewal of PA-05-155 and will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3385. Inquiries: Dr. Suresh Mohla—mohlas@mail.nih.gov

Basic Research in the Bladder and Lower Urinary Tract

Announcement Number: PA-06-254
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1, June 1, and Oct. 1, 2008; Feb. 1, 2009.

This is a renewal of PA-03-136 and will use the R01 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3387. Inquiries: Dr. Suresh Mohla—mohlas@mail.nih.gov

Basic Research in the Bladder and Lower Urinary Tract

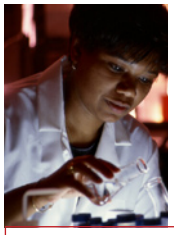
Announcement Number: PA-06-255
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, June 1, and Oct. 1, 2007; Feb. 1, June 1, and Oct. 1, 2008; Feb. 1, 2009.

This is a renewal of PA-03-136 and will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3389. Inquiries: Dr. Suresh Mohla—mohlas@mail.nih.gov

Exploratory/Developmental Clinical Research Grants in Obesity

Announcement Number: PA-06-256
New Application Receipt Dates: June 1 and Oct. 1, 2006; Feb. 1, 2007.

This is a renewal of PAR-04-082 and will use the R21 award mechanism. For more information, see http://cri.nci.nih.gov/4abst.cfm?initiativeparfa_id=3390. Inquiries: Dr. Sharon A. Ross—sr75k@nih.gov ◆



Featured Clinical Trial

Studying Childhood ALL Relapse and Survival

Name of the Trial
Study of Adherence to Long-Term Maintenance Mercaptopurine Therapy in Younger Patients with Acute Lymphoblastic Leukemia in First Remission (COG-AALL03N1). See the protocol summary at http://cancer.gov/clinicaltrials/COG-AALL03N1.

Principal Investigator
Dr. Smita Bhatia, Children's Oncology Group

Why This Trial Is Important
Acute lymphoblastic leukemia (ALL) is the most common childhood cancer in the United States. Though once considered universally fatal, childhood ALL can now be cured in approximately 80 percent of patients.

While the rates of disease remission following initial treatment are similar for children of various racial and ethnic groups, the rates of relapse and survival differ. Asian children have the best survival and African American children the worst. Survival rates for white and Hispanic children fall between these extremes.

In this study, researchers will monitor patients in these groups to see if differences can be found in disease biology, in the way cancer-fighting medications (in particular, mercaptopurine) are metabolized by the body, and in adherence to prescribed long-term medication dosing and schedule. Blood samples will be taken to determine how children in the different groups metabolize mercaptopurine, because differences in drug metabolism may contribute to the dissimilarity in survival rates. In addition, an electronic pill-monitoring system and adherence questionnaires will be used throughout the study to determine if there are differences in adherence behavior.

Dr. Smita Bhatia

"It is very important to understand why differences in relapse and survival exist, so we can initiate interventions to mitigate these differences," said Dr. Bhatia. "If effective interventions can be developed, survival for Hispanic and African American children could potentially improve by 10 to 15 percent."

Who Can Join This Trial
Researchers seek to enroll 720 patients aged 21 or younger at diagnosis who are undergoing long-term maintenance therapy for ALL. See the list of eligibility criteria at http://cancer.gov/clinicaltrials/COG-AALL03N1.

Contact Information
This study is being conducted at Children's Oncology Group member institutions. For more information, see the study contact information at http://cancer.gov/clinicaltrials/COG-AALL03N1 or call the NCI Cancer Information Service at 1-800-4-CANCER (1-800-422-6237). The toll-free call is confidential. ◆

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

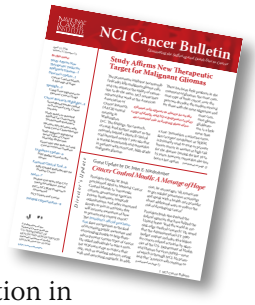
Notes

Revised Breast Cancer Risk Assessment Tool Available

A revised version of the Breast Cancer Risk Assessment Tool is now available on NCI's Web site. Intended for use by health professionals, this tool calculates 5-year and lifetime estimates of a woman's risk of developing invasive breast cancer based on her medical history, reproductive history, and family history of the disease. The tool was designed by scientists at NCI and the National Surgical Adjuvant Breast and Bowel Project, an NCI Clinical Trials Cooperative Group.

The revised tool has a more appealing user interface and includes information about the statistical model upon which the tool is based. A "Quick Links" feature provides easy access to a broad range of breast cancer-related information on the NCI Web site, including information about current breast cancer prevention and treatment clinical trials. The tool can be accessed at http://www.cancer.gov/bcrisktool.

Cancer Bulletin Wins Award



The *NCI Cancer Bulletin* has received a 2006 Award for Excellence in the Print Media Communicator Awards competition in the Government Newsletter category. The Print Media Communicator Awards is an international awards competition that recognizes outstanding work in the communications field. Entries are judged by industry professionals who look for products that serve as benchmarks for the field. There were 5,214 entries from throughout the United States and several foreign countries for the print competition alone. The Award for Excellence is given to projects that exceed industry standards in design and communications skills. The entire 2006 winner list is available at http://www.communicator-awards.com/print/prntwin.html.

The Nation's Investment in Cancer Research for FY 2007 Now Available in HTML

NCI recently posted the HTML version of *The Nation's Investment in Cancer Research: A Plan and Budget Proposal for Fiscal Year 2007* at http://plan.cancer.gov. Users can perform enhanced searches and link to other sites for more information on programs and topics highlighted in the document. Users can also download a PDF from this site. Hard copies can be ordered by sending an e-mail to cisocc@pop.nci.nih.gov.

This FY 2007 plan and budget proposal describes new and continuing activities that, in the best judgment of NCI's leadership, will help achieve the challenge goal of eliminating the suffering and death due to cancer. The document describes five high impact areas requiring an infusion of resources to maximize research advances. Each is essential to accelerate progress against cancer and contribute to the overall health of the nation.

"Understanding NCI" Teleconference Set for April 27

The next teleconference in the "Understanding NCI" series will take place on April 27 at 2:00 p.m. (EDT). This teleconference will provide an introduction to the issues surrounding biorepositories and biospecimen research. Join Dr. Carolyn Compton, director of Biorepositories and Biospecimen Research, and Paula Kim, NCI Board of Scientific Advisors member and advocate, in a discussion of tissue banking. Callers will be able to ask questions and participation is free. Interested individuals should call 1-800-857-6584 (Passcode: TISSUE). More information is available online at the Office of Liaison Activities Web site at http://la.cancer.gov/teleconference.html.

DCEG Holds Town Meeting

NCI Deputy Director and Deputy Director for Translational and Clinical Sciences Dr. John Neiderhuber was the featured speaker at the Division of Cancer Epidemiology and Genetics' (DCEG) annual Town Meeting on April 10. Dr. Neiderhuber emphasized his strong support for the work being carried out by DCEG investigators as well as the rest of NCI's intramural research program. He noted that, despite the current fiscal constraints, there are still tremendous opportunities to pursue excellent science by leveraging NCI's existing resources and promoting team science through partnerships with the extramural community. He reiterated his belief in team science, and expressed the view that NCI's strength resides in its staff. ◆

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. ◆

Community Update

Conference Promotes Collaborations in Traditional Chinese Medicine Research

Interest in the use of complementary and alternative medicine (CAM) has exploded in the United States. NCI defines CAM as any medical system, practice, or product not thought of as "standard care," including acupuncture, herbal preparations, dietary supplements, and mind-body interventions such as meditation. In 1998, NCI established the Office of Cancer Complementary and Alternative Medicine (OCCAM) to lead NCI's research efforts in this area and evaluate CAM therapies for incorporation into the prevention, diagnosis, and treatment of cancer, and to palliate cancer-related symptoms and side effects of conventional treatment.

From its inception, OCCAM has coordinated NCI's domestic and international collaborations in the CAM field. The office recently sponsored a conference, "Traditional Chinese Medicine and Cancer Research: Fostering Collaborations; Advancing the Science," which was held on the NIH campus April 10–12. The event brought together physicians and researchers from China, Taiwan, the United States, Canada, and Europe to present research on traditional Chinese medicine (TCM) for cancer prevention, treatment, and palliation, and to explore opportunities for future joint research projects.

An introductory speech by Dr. Mark Clanton, NCI deputy director and deputy director for Cancer Care Delivery Systems, stressed the collaborative aspect of the conference. "The second part of the conference title is the most important for me," said Dr. Clanton, "creating relationships, partnerships, and collaborations in order to advance the science. Scientists at NCI are very eager to understand more about traditional Chinese medicine."

On the first day of the conference, speakers presented information on a wide range of TCM topics, such as herbal medicine for cancer prevention in high-risk populations, acupuncture for treatment of chemotherapy-induced hot flashes in breast cancer survivors, and isolation of cell-signaling pathways targeted by specific TCM preparations. On the second day, investigators broke into small groups to allow for more discussions on subjects, such as integration of conventional and TCM therapies for cancer, applying clinical research methodology to the evaluation of TCM therapies, and regulatory challenges found in managing human-subjects research for collaborative international clinical trials. The conference closed on the third day with plenary sessions and a moderated panel discussion on "Conducting TCM Cancer Research in the West: Theory and Practice."

One theme that arose frequently during the conference was the challenge of verifying TCM therapies in the modern clinical setting. Most TCM herbal preparations are a combination of many natural products, and the active compounds they contain can vary drastically depending on where they were grown or collected, or even from one year to the next in the same area. Because of this natural variability, scientists stressed the need for rigorous quality control in production and a thorough understanding of the molecular mechanisms behind the efficacy observed in any TCM preparation.

Dr. David Eisenberg of Harvard Medical School's Division for Research and Education in Complementary and Integrative Medicine said, "Assurance of quality, purity, activity, and reproducibility are prerequisites to the conduct of future NIH trials."

For more information, go to http://www.cancer.gov/cam/news/tcm.html ◆

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.