NATIONAL CANCER INSTITUTE

NCI Cancer Bulletin

Eliminating the Suffering and Death Due to Cancer

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In this issue:

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NCI Budget Outlook for 2004

The National Cancer Institute's (NCI) funding has increased by 80 percent since 1998, while the budget for the National Institutes of Health (NIH) has doubled. This historic resource growth permitted a re-energizing of the entire biomedical research enterprise in unprecedented ways. The unprecedented growth in biomedical research provides an opportunity for exponential progress. This has allowed the director of NCI to issue a challenge: eliminate the suffering and death due to cancer by 2015. But as NCI continues its operations into fiscal year 2004, it does so without a clear picture of what resources will be available.

Presently, NCI and all of NIH operate under a continuing resolution (CR) that expires January 31, 2004. Congress included appropriations for the Department of Health and Human Services in an omnibus spending bill, which the House approved. The Senate is expected to vote on it January 20, 2004. (See more on page 5.) If the omnibus bill is not enacted, NCI may work under the CR further into 2004.

The CR provides NCI $4.592 billion, the same level as in 2003. The omnibus bill, if enacted, would include the level requested by the president, which is $4.771 billion, or a 3.9 percent increase of $178 million. However, the bill includes two rescissions that would reduce the *(continued on page 2)*

Director's Update

Setting a New Path for Cancer Research

On December 23, 2003, the cancer research field marked the 32nd anniversary of the start of our Nation's war on cancer. On that date in 1971, President Nixon signed the National Cancer Act into law. We knew little at the time about the biology of cancer and had few tools to effectively prevent or treat the disease, but this law committed our will and resources to the goal of eliminating cancer and entrusted leadership of this effort to the National Cancer Institute (NCI). The age of molecular biology was dawning, enabling scientists to gain greater insights into the fundamental processes of both normal and cancerous cells. And the challenge to eliminate cancer inspired many of our Nation's best and brightest to devote their energy and talent to eliminating the disease. Over three decades we have made great progress.

The union of talent, scientific discovery, and advanced technology continues to expand our knowledge of the factors that increase cancer risk and of the processes within the cell that are disrupted in cancer's onset and progression. Our understanding of the molecular *(continued on page 2)*

(NCI Budget Outlook continued from page 1)
$178 million increase to approximately $150 million.

NCI must make challenging funding decisions—some interim—to maintain operations and issue grant and contract awards. In the research project grant arena, the non-competing commitments from prior competing awards necessitate an increase of more than 8 percent, or $113 million. NCI remains committed to fund these increases whether the final budget is at the flat CR or the omnibus bill level. This has a direct affect on our ability to fund competing awards. Therefore, interim grant pay-lines and funding levels for all NCI programs are being developed that will permit it to conduct its business until the picture clarifies.

Future indications are that NIH and NCI may not see the significant growth of the last five years continue. Hence, NCI must intensify its review of program portfolios to identify funds that can be re-deployed and to assure the research community that the discovery engine is maintained and discovery translation continues to move. The pace of scientific discovery in cancer has never been more exciting and, correspondingly, NCI has seen an increase in grant applications. More applications with exciting scientific proposals are coming forward just at a time when large increases to the NCI bottom line are unlikely.

Later this month, NCI will convene a retreat of the members of NCI's National Cancer Advisory Board, the Board of Scientific Counselors and the Board of Scientific Advisors to review various funding scenarios and to discuss future program funding in an effort to determine how best to apply NCI's resources so that the institute may achieve its 2015 goal. ◆

(Director's Update continued from page 1)
basis of cancer has led to more effective prevention strategies, the development of improved tests for early detection, more precise diagnostic methods, and more powerful treatment approaches.

Many of these advances are reflected in the growth of cancer survivorship —from 3 million survivors in 1971 to 10 million today—and in continuing declines in the death rates from the most common cancers—lung, breast, prostate, and colorectal. And now we look to the future.

Today, we again are entering a new period in cancer research; we are once again setting a new goal for the cancer research field. Rather than working toward eliminating cancer, we have established a more immediate and achievable goal: eliminating the suffering and death caused by cancer.

I have publicly issued a challenge to the cancer community to achieve this goal by 2015. Our chief strategy is pre-emption. We will strive to prevent the onset as well as the progression of cancer, identify cancers at the earliest stage, eliminate cancer through targeted treatments, and biologically control cancers that we cannot eliminate so they become manageable, chronic diseases. This future is feasible because of the feats of the past.

And NCI will continue to lead the cancer community's efforts toward this goal. We must rely on effective collaborations throughout our diverse community. These partnerships nurture an integrated approach to fighting cancer and ensure that research discoveries are translated into clinical and public health interventions that can be delivered to all who need them. Our longstanding collaboration with the Centers for Disease Control and Prevention for delivery will continue and one of our most exciting new partnerships brings together NCI and the Food and Drug Administration to improve development of interventions. As sister agencies of the U.S. Department of Health and Human Services, we are committed to working together to remove bottlenecks in the process of developing and approving safe, more effective new cancer interventions.

NCI also must work toward developing and fully integrating technologies. To do so, we must encourage collaboration among experts in a range of professional disciplines. We also must develop and exploit emerging technologies more fully and apply them to our efforts in genomics, proteomics, metabolomics, systems biology, population sciences, and the development of effective anticancer agents.

Last summer, I announced the creation of the National Advanced Biomedical Technologies Initiative for Cancer; the announcement can be read at http://cancer.gov/directorscorner/directorsupdate-09-09-2003. The National Cancer Advisory Board has commissioned an ad hoc subcommittee—led by Drs. Eric Lander and Lee Hartwell—to advise NCI's senior leadership about how this initiative should be formulated to best serve the needs of the research community. At present, the committee is putting together working groups focusing on characterization of cancer in the cell; diagnosis of cancer in the organism; cancer therapeutics; public health; and organizing technology access, development, and dissemination.

Finally, we must facilitate integration of *discovery* activities; accelerate *development* of new tools, technologies, and interventions; and ensure the *delivery* of interventions. In 2003,

the NCI leadership team and I have worked to determine how NCI can help remove barriers that are impeding advancement; create greater links among discovery, development, and delivery; and speed our progress toward the 2015 goal. We've determined that, in addition to our current programs, NCI should expand initiatives in 2004 in seven strategic priority areas: molecular epidemiology; integrated cancer biology; strategic development of cancer interventions; prevention, early detection, and prediction; an integrated clinical trials system; overcoming health disparities; and bioinformatics.

With this Director's Update, we are launching our new *NCI Cancer Bulletin*. In each issue, the Bulletin will report on important new initiatives, the latest grant and contracting opportunities, important research advances, and NCI clinical trials. A section titled "NCI Notes" will offer information on new resources and staffing changes. "Special Reports" will focus on NCI's seven strategic priority areas and other important ventures. Legislative and budget columns will provide up-to-date reports. A meeting calendar will feature selected scientific meetings sponsored by NCI and others. And my Director's Updates will be a regular feature. This new publication will provide the cancer community with a window into NCI's activities as we continue our journey toward the 2015 goal. ◆

Andrew C. von Eschenbach, M.D.
Director, National Cancer Institute

Featured Clinical Trial

The Modafinil and Fatigue Trial

Name of the Trial
Phase III Randomized Study of Modafinil for Fatigue in Cancer Patients Receiving Chemotherapy (URCC-U2901). See the protocol summary at http://cancer.gov/clinicaltrials/URCC-U2901.

Principal Investigator
Dr. Gary Morrow of the University of Rochester Cancer Center in New York.

Why Is This Trial Important?
Fatigue affects many people with cancer, especially those receiving treatment. Fatigue is complex and has biological, psychological, and behavioral causes.

Research suggests that the drug modafinil, a stimulant, may be effective in relieving fatigue. This study is testing the ability of modafinil to reduce fatigue in cancer patients who are receiving chemotherapy. The study will also examine the relationship between depression and fatigue in patients treated with modafinil.

"Fatigue related to cancer and to cancer treatment are important issues, especially for patients," said Dr. Lori Minasian, chief of the National Cancer Institute's Community Oncology and Prevention Trials Research Group. "Modafinil is one of the more innovative means of treating fatigue, since it works on the body's central nervous system. With this trial, NCI-supported researchers are pursuing a different approach in combating the fatigue that often accompanies treatment for cancer."

Courtesy of ASCO, © 2001

Dr. Gary Morrow
Principal Investigator

Who Can Join This Trial?
The modafinil trial seeks to enroll 837 cancer patients age 18 and older who are currently undergoing chemotherapy. More information can be found at http://cancer.gov/clinicaltrials/URCC-U2901.

Where Is This Trial Taking Place?
Multiple study sites in the United States are enrolling patients in the modafinil trial. See the list of study sites at http://cancer.gov/clinicaltrials/URCC-U2901.

Who to Contact
See the list of study contacts at http://cancer.gov/clinicaltrials/URCC-U2901 or call the National Cancer Institute's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237). The call is toll-free and completely confidential. ◆

Funding Opportunities

***In vivo* Cancer Imaging Exploratory/ Developmental Grants**
PA-04-045
Application Receipt Dates: Feb. 1, 2004; June 1, 2004; Oct. 1, 2004; Feb. 1, 2005; June 1, 2005; Oct. 1, 2005

This initiative provides investigators at all career levels with funding for the initial development and/or feasibility testing of high-impact concepts. Research topics will fall within the entire spectrum of *in vivo* cancer imaging research, from basic discovery to preclinical testing and validation to early feasibility testing of those novel agents and technologies in small clinical trials.

For more information see http://cri.nci.nih.gov/index.cfm.
Inquiries: Dr. Anne Menkens, am187k@nih.gov

Clinical Cancer Therapy and Prevention Research
PA-04-046
Application Receipt Dates: Feb. 1, 2004; June 1, 2004; Oct. 1, 2004; Feb. 1, 2005; June 1, 2005; Oct. 1, 2005

The NCI seeks R01 applications to conduct translational, clinical, therapeutic, and preventive studies/trials of neoplastic diseases in humans and encourages clinical researchers to collaborate with basic scientists for translation of new anticancer agents into innovative cancer intervention studies/trials.

For more information see http://cri.nci.nih.gov/index.cfm.
Inquiries: Dr. Roy Wu, wur@mail.nih.gov

Cancer Research Highlights

Risk of Rare Uterine Cancers Increases Following Use of Tamoxifen

Women who were initially treated with tamoxifen for breast cancer are at an increased risk of rare cancers of the uterus, according to a study published in the January 7, 2004, *Journal of the National Cancer Institute*.

Rochelle E. Curtis and colleagues from the NCI's Division of Cancer Epidemiology and Genetics found that women who took tamoxifen were four times more likely to develop malignant mixed mullerian tumors (MMMTs) of the uterus as compared to women in the general population. Tamoxifen-treated women were also twice as likely to develop endometrial adenocarcinoma of the uterus, in agreement with results reported in previous studies.

"However, it is important to recognize that the absolute risk of a woman developing MMMT is small," Curtis said, "because these tumors are so rare." For every 10,000 women who took tamoxifen to treat their cancer, an additional 1.4 MMMT cases per year were reported, compared to an additional 8.4 cases per 10,000 women per year for endometrial adenocarcinomas, Curtis said.

"We know more about tamoxifen than we do about any other drug used to treat and prevent breast cancer," said Dr. Leslie Ford, associate director for clinical research, Division of Cancer Prevention. "These results are similar to what we have found in clinical trials and are included in information provided to women considering tamoxifen therapy. It is important for women taking this drug to make informed choices."

Curtis and her colleagues used the cancer registries of the Surveillance, Epidemiology, and End Results Program to follow nearly 39,500 women who were diagnosed from 1980 through 2000, and who had not received initial chemotherapy.

The registry data also showed that after the initial diagnosis of breast cancer, MMMTs tended to be detected later than endometrial adenocarcinomas (7.5 years vs. four to five years). The MMMTs that developed after breast cancer were aggressive tumors with generally poor prognosis.

"Despite limited evidence that MMMTs and endometrial adenocarcinomas may share reproductive and hormonal risk factors, the mechanisms underlying tamoxifen-related MMMTs are unclear," said Curtis. "These findings indicate that tamoxifen may have delayed effects in some patients, such as the heightened risk of MMMT."

Anastrozole May Benefit Some Women More Than Tamoxifen

Postmenopausal women with breast cancer who were switched from tamoxifen to a newer drug, anastrozole (Arimidex®), were less likely to die or to have a relapse of their disease than women who continued to take tamoxifen. These preliminary findings were presented by Dr. Francesco Boccardo, of the National Institute of Cancer Research, in Genoa, Italy, at the San Antonio Breast Cancer Symposium, December 3, 2003.

A total of 426 women who had been taking tamoxifen for two years or more were randomly assigned to continue on tamoxifen for up to five years or to switch to anastrozole for a comparable period of time. All of the women had had surgery for breast cancer that had spread to the lymph nodes. All had tumors that were positive for the estrogen receptor. Women were followed for a median of two years.

Of 218 women assigned to continue taking tamoxifen, 26 (12 percent) have had a recurrence of breast cancer, been diagnosed with a second primary cancer, or died. Of 208 women assigned to take anastrozole, 10 (5 percent) have had a recurrence of breast cancer or been diagnosed with a second cancer, and none has died.

Although the results of this study are encouraging, longer follow-up is needed before it can be concluded that anastrozole is superior to tamoxifen, according to Dr. Jennifer Eng-Wong, a medical oncologist at the National Cancer Institute.

Imatinib Inhibits the Growth of Neuroblastoma Cells

The cancer drug imatinib (Gleevec™) shows promise against neuroblastoma, the most common solid extracranial tumor of early childhood, according to a study in the January 7, 2004, issue of the *Journal of the National Cancer Institute*. In culture and in a mouse model, imatinib inhibited the growth of neuroblastoma cells, reported the research team led by Dr. Carol J. Thiele of NCI's Pediatric Oncology Branch. ◆

Legislative Update

FY 2004 Appropriations Passed by House

The House of Representatives passed the conference report on HR 2673, the FY 2004 Agriculture Appropriations bill, on Dec. 8, 2003. This bill contains an omnibus spending package for several government agencies, including the Department of Health and Human Services, which funds the National Institutes of Health (NIH). If the bill is enacted, NIH would receive $27.9 billion, which is $1 billion more than in FY 2003. The National Cancer Institute (NCI), one of the 27 institutes at NIH, would receive $4.7 billion. The conference report will need to be passed by the Senate and signed by the President in order to be enacted. Senate Majority Leader Bill Frist (R-TN) has set Jan. 20, 2004, as the date for the Senate to vote on the legislation. In the interim, federal agencies included in this omnibus measure will operate at FY 2003 levels through Jan. 31, 2004.

Senate Introduces National Cancer Act of 2003

On Nov. 20, 2003, the National Cancer Act of 2003 (S. 1899) was introduced by Sen. Sam Brownback (R-KS). The bill emphasizes coordination of data sharing by state cancer registries and registries funded under the Surveillance, Epidemiology, and End Results (SEER) Program. The bill would authorize funding for programs that emphasize patient education, survivorship, and pain and symptom management. The full text of the act can be found at http://thomas.loc.gov.

2003 Hearings: A Look Back

NCI Director Dr. Andrew C. von Eschenbach and staff were called to testify before the 108th Congress on several occasions in 2003. Below is a thumbnail sketch of 2003 hearings that involved NCI personnel. The full text of submitted testimony for all of these hearings can be found at: http://www3.cancer.gov/legis/hearings.html.

House Government Reform Subcommittee on Human Rights and Wellness

This committee, chaired by Rep. Dan Burton (R-IN), held hearings in September and November 2003 on simian virus 40 and whether vaccines, such as the polio vaccine, have been contaminated with the virus and could be the cause of increased cancer rates. NCI's Dr. James Goedert, chief, Viral Epidemiology Branch, Division of Cancer Epidemiology and Genetics (DCEG), testified at the first hearing and Dr. Robert Hoover, director, Epidemiology and Biostatistics Program, DCEG, testified at the second hearing. Hoover was accompanied by Dr. May Wong, program director, DNA Virus Studies, Division of Cancer Biology, NCI.

House Energy and Commerce Subcommittee on Health

Chaired by Rep. Michael Bilirakis (R-FL), the July 2003 hearing entitled, "NIH: Moving Research from the Bench to the Bedside," featured witnesses Dr. Anna Barker, NCI deputy director for strategic scientific

initiatives, and Dr. Mark Rohrbaugh, director, Office of Technology Transfer, NIH. Barker reported on a newly announced partnership between the U.S. Food and Drug Administration and NCI to accelerate approval of drugs to treat cancer.

House Committee on Government Reform

The June 2003 hearing convened by Rep. Tom Davis (R-VA) examined the potential public health impact and regulatory challenges of "reduced-harm" tobacco products. Dr. Scott Leischow, chief, NCI Tobacco Control Research Branch, testified.

Senate Appropriations

On April 8, 2003, a Senate Appropriations hearing was held to discuss the FY 2004 President's Budget requests for NIH. NIH Director Dr. Elias Zerhouni was accompanied by all institute and center directors.

House Appropriations

NIH appropriations for FY 2004 were discussed initially at an April 2, 2003, hearing with NIH Director Dr. Elias Zerhouni, NIH Deputy Director Dr. Raynard Kington, NCI Director Dr. Andrew von Eschenbach, and two other institute directors.

Senate Cancer Coalition

Co-chaired by Senators Dianne Feinstein (D-CA) and Sam Brownback (R-KS), the coalition held a hearing on Cancer Survivorship on March 31, 2003. Dr. Julia Rowland, director, Office of Cancer Survivorship, testified for NCI. The coalition held a second cancer hearing in June 2003 on the subject of molecular targets used for treating cancer. Dr. J. Carl Barrett, director of the NCI Center for Cancer Research, testified. ◆

States with Laws Related to Smoking in Restaurants

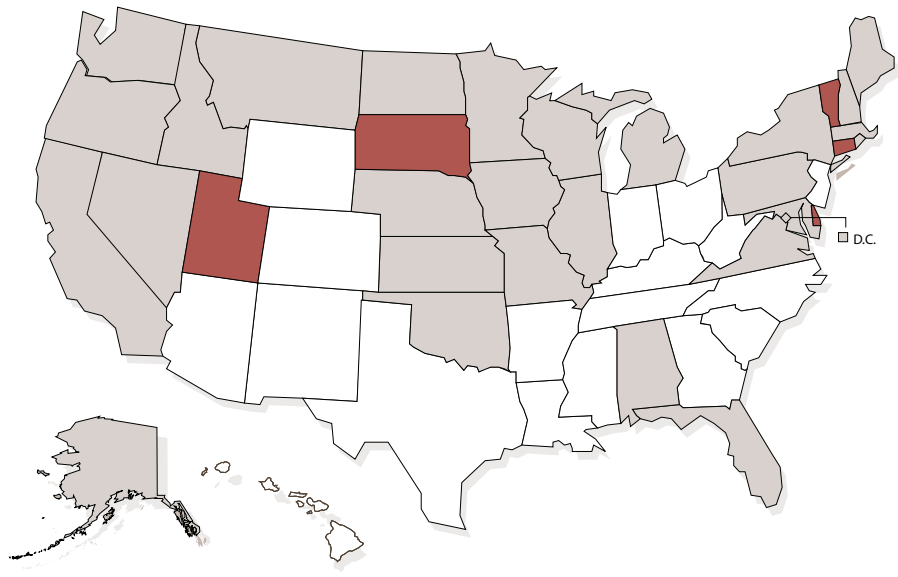
Thirty-two states and the District of Columbia have enacted laws related to smoking in restaurants. Laws in these states vary from restricting smoking to designated areas to prohibiting smoking completely.

As of September 30, 2003, five states—Connecticut, Delaware, South Dakota, Utah, and Vermont—have enacted laws prohibiting smoking inside restaurants.

Twenty-eight jurisdictions have laws that restrict smoking to designated areas. Twelve of these states require the use of existing or adequate ventilation systems in areas designated for smoking. By March 2006, restaurants in Oklahoma must provide designated smoking rooms that are fully enclosed, with ventilation that directly exhausts smoke to the outdoors, or they must provide completely nonsmoking facilities.

Of the states that restrict smoking to designated areas, more than 50 percent (15 states) have laws that only apply to restaurants with a specified minimum seating capacity. The specified seating capacity varies by state and ranges from 30 to 75 persons. Alabama's law is unique because it gives the owners of restaurants that are considered too small to have a designated smoking area the discretion to have a smoking facility or a completely nonsmoking facility.

Eighteen states have not passed laws restricting smoking in restaurants. Laws related to smoking in outdoor areas of restaurants were not included in this summary. Provisions set forth in state regulations and local government measures are also not included.



Smoking prohibited in restaurants (n=5)

Smoking restricted to designated areas in restaurants (n=28)

No law governing smoking in restaurants (n=18)

NCI Notes

Monograph Focuses on Human Papillomaviruses and Cancer

The Journal of the National Cancer Institute Monographs, No. 31, "Future Directions in Epidemiologic and Preventive Research on Human Papillomaviruses and Cancer," provides up-to-date coverage on various areas of HPV research. The monograph includes information about the natural history of HPV, immunosuppression, vaccines, cofactors that promote cancer, and descriptive epidemiology. The monograph, edited by Dr. F. Xavier Bosch of the Catalan Institute of Oncology in Barcelona, Spain, and Drs. Mark Schiffman and Diane Solomon of NCI, is the result of a June 2002 workshop at NCI. The full text of this JNCI monograph can be found at: http://jncicancerspectrum.oupjournals.org/jncimono/content/vol2003/issue31/.

People

Dr. Richard Kaplan, chief of the

Clinical Investigations Branch (CIB) of NCI's **Cancer Therapy Evaluation Program** (CTEP), has accepted a position as associate director of the National Cancer Research Network (NCRN) in the United Kingdom, and as professor of clinical cancer studies at the University of Leeds. At NCRN, Dr. Kaplan will develop and manage its trials portfolio, coordinate priorities with major sources of funding, promote productive links with industry, and facilitate the integration of related objectives into more trials, among other responsibilities. He also will assist the chief executive of Cancer Research U.K. (CRUK) with the clinical research components of its funding portfolio.

Dr. Kaplan has had a distinguished career with NCI, beginning as a clinical associate in the intramural program in 1971. In 1992, he began his position with CIB/CTEP and was named branch chief in 2000. While at CTEP, Dr. Kaplan played crucial roles in restructuring clinical trials, as well as creating and expanding the Brain Tumor Consortia.

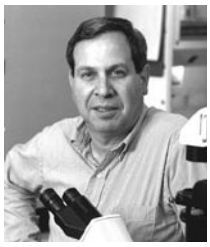
Dr. Beverly Mock has been appointed chief of the **Laboratory of Genetics** in NCI's Center for Cancer Research (CCR). Dr. Mock is an internationally recognized mouse geneticist whose research has concentrated on cancer as a complex genetic trait. Her work has focused on identifying genes involved in the predisposition of inbred strains of mice to develop plasma cell and skin tumors.

Dr. Mock has served as CCR's associate director of scientific planning since 1999. In addition to her administrative and scientific contributions to CCR, she has served as head of the NIH-wide Genetics Interest Group, and as committee chair for the International Mouse Genome Society for the compilation of linkage maps of mouse chromosomes 4 and 15.

Dr. Gilbert Wheeler Beebe, NCI epidemiologist renowned for his

monumental studies of populations exposed to ionizing radiation, died at age 90 in March 2003. Following his death, NCI's **Radiation Epidemiology Branch** (REB) created a memorial fund in his name, which will award travel funds for young investigators attending the Radiation Research Society (RRS) Annual Meeting. The next RRS meeting will be held in April 2004 in St. Louis, Mo. The memorial is just one of several awards honoring Dr. Beebe for the enormous influence of a nearly 70-year career. He played key roles in major epidemiological studies, from the effects of the 1945 atomic bombings in Japan to the study of thyroid cancer and leukemia risk among populations after the Chernobyl accident.

Dr. Stuart Yuspa, chief, Laboratory of Cellular Carcinogenesis and



Tumor Promotion, and deputy director, **Center for Cancer Research**, NCI, will be presented in April with the annual Stephen Rothman Memorial Award. This is the highest honor bestowed by the Society for Investigative Dermatology. Recipients of this tribute have made major scientific contributions to cutaneous biology and excelled as mentors and recruiters of outstanding young investigators in the field. Awardees have distinctly altered the course and image of cutaneous biology, clinical dermatology, and its allied fields.

Dr. Michael Bishop received the 2003 Distinguished Clinical Teacher's

Award from the NIH Fellows Committee for his role in mentoring, teaching, patient care, and clinical research. Bishop serves as the clinical head of the **Stem Cell Transplantation Program** in the Experimental Transplantation and Immunology Branch, within the Center for Cancer Research, NCI. ◆

Featured Meetings

This is a list of selected scientific meetings sponsored by NCI and other organizations. For locations and times and a more complete list of scientific meetings, including NCI's weekly seminars and presentations open to the public, see the NCI Calendar of Scientific Meetings at http://calendar.cancer.gov.

2004 NCI Advisory Committee Meetings January-March

Date	Advisory Committee
Jan 5-6	President's Cancer Panel
Feb 17-19	National Cancer Advisory Board
Mar 15-16	Clinical Sciences and Epidemiology—Subcommittee 1, Board of Scientific Counselors, NCI
Mar 15-16	Basic Sciences—Subcommittee 2, Board of Scientific Counselors, NCI
Mar 15-16	NCI Board of Scientific Advisors

Selected Meetings of Interest This Month

Date	Meeting	NCI Speaker(s)
Jan 20-21	NCI Sponsored Roundtable—Leveraging Multisector Technology Development Resources and Capabilities to Accelerate Progress Against Cancer	Dr. Andrew C. von Eschenbach, Director Dr. Anna Barker, Deputy Director for Strategic Scientific Initiatives
Jan 28	Building the Interface of Nanotechnology and Cancer Imaging Research Symposium	Dr. Anna Barker, Deputy Director for Strategic Scientific Initiatives
Jan 29-30	Fifth National Forum on Biomedical Imaging in Oncology	Dr. Ellen Feigal, Acting Director, Division of Cancer Treatment and Diagnosis
Jan 30-Feb 1	American Psychosocial Oncology Society First Annual Conference: Advancing Multidisciplinary Approaches to Psychosocial Oncology	Dr. Andrew C. von Eschenbach, Director

NCI Exhibits

NCI Exhibits are presented at various professional and society meetings. More information about the NCI Exhibits program can be found at: http://exhibits.cancer.gov.

This *NCI Cancer Bulletin* is produced by the National Cancer Institute (NCI). NCI, which was established in 1937, leads a national effort to eliminate the suffering and death due to cancer. Through basic and clinical biomedical research and training, NCI conducts and supports research that will lead to a future in which we can 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://cancer.gov.

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