DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
NATIONAL CANCER INSTITUTE
126th NATIONAL CANCER ADVISORY BOARD

Summary of Meeting
June 10, 2003

Building 31C, Conference Room 10
National Institutes of Health
Bethesda, Maryland

NATIONAL CANCER ADVISORY BOARD
BETHESDA, MARYLAND
Summary of Meeting
June 10, 2003

The National Cancer Advisory Board (NCAB) convened for its 126th regular meeting on Tuesday, June 10, 2003, in Conference Room 10 of Building 31, National Institutes of Health (NIH), Bethesda, MD. The meeting was open to the public on Tuesday, June 10, 2003, from 8:30 a.m. to 4:10 p.m. The meeting was closed to the public from 4:25 p.m. until adjournment at 5:30 p.m. NCAB Chair Dr. John E. Niederhuber, Professor, Departments of Oncology and Surgery, University of Wisconsin-Madison presided during both the open and closed sessions.

NCAB Members

Dr. John E. Niederhuber (Chairperson)
Dr. James O. Armitage
Dr. Moon S. Chen, Jr.
Dr. Kenneth H. Cowan
Dr. Jean B. deKernion
Mr. Stephen C. Duffy
Dr. Ralph S. Freedman
Dr. Elmer E. Huerta
Dr. Eric S. Lander
Dr. Susan M. Love
Dr. Arthur W. Nienhuis
Dr. Larry Norton
Ms. Marlys Popma
Dr. Franklyn G. Prendergast
Dr. Amelie G. Ramirez
Ms. Lydia G. Ryan

President's Cancer Panel

Dr. LaSalle D. Leffall, Jr. (Chairperson)
Dr. Margaret Kripke

Alternate Ex Officio NCAB Members

Dr. Steven Akiyama, NIEHS
Dr. Peter Kirchner, DOE
Dr. Hugh McKinnon, EPA
Dr. T.G. Patel, VHA
Dr. Richard Pazdur, FDA
Dr. John Powers, DOD

Members, Executive Committee, National Cancer Institute, NIH

Dr. Andrew von Eschenbach, Director, National Cancer Institute
Dr. Alan Rabson, Deputy Director, National Cancer Institute
Dr. Anna Barker, Deputy Director, Strategic Scientific Initiatives
Dr. J. Carl Barrett, Director, Center for Cancer Research
Ms. Nelvis Castro, Deputy Director, Office of Communications
Dr. Robert Croyle, Director, Division of Cancer Control and Population Sciences
Dr. Ellen Feigal, Acting Director, Division of Cancer Treatment and Diagnosis
Dr. Joseph Fraumeni, Director, Division of Cancer Epidemiology and Genetics
Dr. Harold P. Freeman, Director, Center to Reduce Cancer Health Disparities
Dr. Peter Greenwald, Director, Division of Cancer Prevention
Dr. Paulette S. Gray, Acting Director, Division of Extramural Activities
Ms. Janice Mullaney, Acting Deputy Director for Management, Office of the Director
Dr. Dinah Singer, Director, Division of Cancer Biology
Ms. Sandy Koeneman, Executive Secretary, Office of the Director

Liaison Representatives

Dr. Clare O'Connor, National Science Foundation
Dr. Robert W. Frelick, Association of Community Cancer Centers
Ms. Barbara K. LeStage, National Cancer Institute, Director's Consumer Liaison Group
Ms. Judy Lundgren, Oncology Nursing Society
Ms. Nancy O'Reilly, The American College of Obstetricians and Gynecologists
Ms. Mary F. Mitchell, American Society of Therapeutic Radiology and Oncology
Ms. Roshundd Drummond, American Society of Therapeutic Radiology and Oncology
Ms. Barbara Stewart, Association of American Cancer Institutes
Ms. Julie Taylor, American Society of Clinical Oncology
Ms. Marie Zinninger, American College of Radiology

TABLE OF CONTENTS

TUESDAY, JUNE 10, 2003

TUESDAY, JUNE 10, 2003

I. INTRODUCTION, WELCOME, AND APPROVAL OF FEBRUARY 2003 MINUTES—DR. JOHN E. NIEDERHUBER

Dr. Niederhuber began by asking for a moment of silence to think of the patients with cancer and those who have passed away from cancer. He welcomed members of the Board; representatives of liaison organizations; members of the President's Cancer Panel (PCP); Dr. Paulette Gray, Acting Director, Division of Extramural Activities (DEA), National Cancer Institute (NCI), and Executive Secretary, NCAB; other NCI staff; and members of the public. Dr. Niederhuber also introduced Dr. Margaret Kripke, Executive Vice President and Chief Academic Officer, The University of Texas M.D. Anderson Cancer Center, who was newly appointed as a member of the PCP, and recognized Ms. Marie Zinninger, new Liaison Representative of the American College of Radiology. He invited the public to submit to Dr. Gray, in writing and within 10 days, comments regarding items discussed during the meeting.

Dr. Niederhuber reviewed the confidentiality and conflict-of-interest practices required of Board members in their deliberations.

Motion. A motion was requested and made to approve the minutes of the February 2003 NCAB meeting. The motion was seconded, and the minutes were unanimously approved by the Board.

II. FUTURE MEETING DATES CONFIRMED THROUGH 2005— DR. JOHN E. NIEDERHUBER

Dr. Niederhuber called Board members' attention to future meeting dates listed in the Agenda; dates have been confirmed through 2005.

III. NCI DIRECTOR'S REPORT—DR. ANREW von ESCHENBACH

Dr. von Eschenbach called attention to the fact that the newly appointed President's Cancer Panel, which includes Dr. LaSalle Leffall, Dr. Kripke, and cyclist Lance Armstrong, held its first meeting in Lisbon, Portugal. He asked for a pause to reflect on these PCP members and the thousands of other talented, gifted individuals who have made the decision to sacrifice and contribute to making a difference in the effort to help those who are suffering and dying from cancer. He announced the successful conclusion of a recent meeting of the American Society of Clinical Oncology (ASCO) and the rescheduling of an American Association for Cancer Research (AACR) meeting to a Washington, DC, location in July.

Budget Update

Dr. von Eschenbach reported that the NCI is operating under the Fiscal Year (FY) 2003 appropriation of approximately $27B, a 10 percent or $415M increase over FY 2002. This budget cycle completes the pledge by Congress to double the NIH budget in 5 years, to the extent of approximately $27B. During this period, NCI has experienced approximately an 80 percent increase in its budget.

Approximately one-half of NCI's FY 2003 allocation went to the support of Research Project Grants (RPGs). A total of 4,813 RPGs were funded, of which 1,379 were competing awards, an increase of 488 from FY 2002 and an absolute growth of 325 grants. Dr. von Eschenbach noted the constant

expansion in numbers of R01 applications received by the NCI and the 4 percent increase in average cost. Taken together, these trends have an impact on percentile funding for FY 2003, which is projected to be at the 20 percent level for R01 grants. Dr. von Eschenbach stated that the NCI is keeping pace with other programs including Centers, Specialized Programs of Research Excellence (SPOREs), and training. An increase of about 14 percent is included for cancer education, research careers, and National Research Service Awards.

Dr. von Eschenbach called attention to the implications of taps and assessments amounting to 24 percent of the NCI FY 2003 budget for other initiatives in NCI and within the Department of Health and Human Services (DHHS), including a $39M increase for program evaluation, $5M for various departmental and NIH information technology systems, and a $6M increase for a loan repayment program. The latter was due to a program expansion to create a larger work force of clinical researchers and physician scientists.

In FY 2004, the President's Budget request is anticipated to be approximately $4.7B, a $161M or 3.5 percent increase over FY 2003. Dr. von Eschenbach noted that this significant drop in percentage of yearly increase will be watched closely to develop appropriate strategies for accommodating the outyear commitments in NCI programs. Opportunities will be sought to leverage the NCI investment through partnerships and collaborations that could enhance the impact of NCI programs, especially in areas such as training and the elimination of health care disparities.

Biomedical Research Enterprise Progress

Dr. von Eschenbach reminded members of the long-range strategic goal that was an outcome of NCI's strategic planning process—to eliminate the suffering and death due to cancer by 2015. Since then, the implications of that goal and appropriate strategies required to achieve it have been discussed and deliberated at a variety of venues. A series of benchmarks was developed to lay out the rationale and underpinning of that goal. Dr. von Eschenbach noted that copies of the benchmarks have been distributed to Board members, and he invited Board members' detailed review and comments.

As part of the rationale behind the goal, Dr. von Eschenbach cited progress within the biomedical research enterprise since the 1975 signing of the National Cancer Act in terms of the growing fund of knowledge, numbers of committed researchers, and available fiscal resources. As a result, cancer is beginning to be understood as a disease process with multiple steps that present multiple opportunities for intervention—from disease prevention to initiation, progression, and management. The NCI, he stated, has continued to expand and develop its portfolio of strategic initiatives essential to achieving the goal. He emphasized that the collaboration and cooperation of the entire cancer community in a multidisciplinary, integrated effort will be required. This effort has been created within the context of a portfolio that balances the elements of discovery, development, and delivery. Dr. von Eschenbach remarked that the NCI will continue to work to drive that agenda.

Dr. von Eschenbach called attention to key strategic initiatives that have become the focus in a series of planning efforts by NCI senior leadership. These initiatives are in the areas of molecular epidemiology; integrated cancer biology; strategic development of cancer interventions; programs of early detection, prevention, and prediction; integrated clinical trials system; overcoming health disparities; and bioinformatics. Specific initiatives will be shared with the Board as the process continues to unfold.

Dr. von Eschenbach noted that these initiatives are being viewed not only as a contextual effort within the NCI but also with regard to opportunities for partnerships and collaborations. He cited the emerging collaboration between the NCI and the Food and Drug Administration (FDA) as one example. An NCI/FDA Task Force has been created and has met formally and informally in *ad hoc* groups to address two areas of opportunity. One is the creation of programs between the two institutions that would facilitate and enhance the ability of both to collaborate in the discovery and development of interventions—to include initiatives in bioinformatics infrastructure and platforms and the validation of biomarkers of intermediate endpoints. Another area of opportunity is to assess and evaluate processes that might be streamlined to enhance the ability to move jointly to capitalize on opportunities in genomics and proteomics for the development of effective interventions. Dr. von Eschenbach thanked Dr. Anna Barker, Co-Chair of the NCI/FDA Task Force, on behalf of the NCI and other NCI staff who are engaged in the process. He looked forward to many other collaborations and areas of cooperation as the NCI continues to reach out and recognize opportunities to work with the rest of the scientific community and continue participation in opportunities that already exist, such as the National Dialogue on Cancer.

Questions and Answers

Dr. Ralph Freedman, Professor, Department of Gynecologic Oncology, The University of Texas M.D. Anderson Cancer Center, asked for clarification of major objectives expected to be achieved during the period leading up to 2015. Dr. von Eschenbach stated that the focus would be on eliminating the end result—metastatic phenotype and death—by being able to strategically intervene at multiple places throughout the continuum of the cancer process. He concluded that the NCI has a broad spectrum of strategic opportunities available, whereby at multiple places and with multiple combinations of interventions, progress can be accelerated across the cancer continuum. With regard to the finite period of time for achieving this, he stated that the exponential growth in knowledge and understanding of cancer, concomitant growth in intellectual capital, financial resources, and explosion in enabling technologies can make it possible to further accelerate progress in eliminating suffering and death from cancer. Dr. von Eschenbach noted that the NCI is uniquely positioned because it can contribute to the research endeavor and at the same time provide leadership to help coordinate and integrate the larger agenda that will be required.

Dr. Susan Love, Adjunct Professor, Department of Surgery, University of California School of Medicine, asked how progress would be measured. Dr. von Eschenbach expressed confidence that the ability to manage the burden of a disease can be measured. He agreed that metrics will have to be developed that will take into account that just as cancer can be exponential in its growth, the solution also can be exponential in its realization.

Dr. Niederhuber asked what steps were in place to ensure that the strategic planning process is flexible and reactive to the changing environment and accomplishments. Dr. von Eschenbach emphasized that strategic planning is a dynamic process that enables senior leadership to manage the NCI portfolio on an ongoing basis to make sure that investments are appropriate within the current environment. Additionally, investments are moved from completion to new opportunity constantly to move the entire agenda towards the goal of seeing a decline in the burden of cancer and death rates, prolonged survival, and diminished suffering.

Dr. Larry Norton, Director, Medical Breast Oncology, Evelyn H. Lauder Breast Center, Memorial Sloan-Kettering Cancer Center, referred to candid discussions at a recent ASCO meeting about the relationship between industry, the private sector, and the public sector. He noted that subsequent interactions with industry have not changed as a result of the discussions, and he asked how the hurdles

related to screening of potentially useful compounds could be dealt with. Dr. von Eschenbach pointed out that the problem was systemic and would require a systems solution. He cited movement in that direction in the NCI-FDA collaboration described earlier and in the parallel effort that is occurring in the biotechnology arena with the pharmaceutical industry. A model, such as the semiconductor industry's SEMITECH, is being sought in which the two areas can work together more effectively and not impair progress by unnecessary conflict. He cited the success of the Human Genome Project as a proof of principle that is being appreciated across the spectrum and driving toward integration of individual efforts.

Dr. Elmer Huerta, Director, Cancer Risk Assessment and Screening Center, Washington Cancer Institute, Washington Hospital Center, asserted that NCI's new goal of eliminating suffering and death from cancer must be clarified for the public through a mobilization of public relations and communication. Dr. von Eschenbach affirmed that NCI is committed to the challenge of helping the American people understand cancer as a disease and their role and participation in finding a solution to the cancer problem.

Dr. James Armitage, Dean, University of Nebraska College of Medicine, asked what the Institute perceives as potential threats to progress in achieving the 2015 goal. Dr. von Eschenbach identified the significant refocusing of the health care agenda after 9/11 on infectious diseases and the problem of bioterrorism as issues to be addressed. Both have possible ramifications to fiscal resources. Another issue is how to successfully import emerging complementary technology (e.g., bioinformatics and computational sciences) from the sectors where it is being developed into the biomedical research effort.

IV. SPECIAL RECOGNITIONS—DRS. ANDREW von ESCHENBACH, JOHN E. NIEDERHUBER, LaSALLE D. LEFFALL, AND MARGARET KRIPKE

Dr. Marvin Kalt

Dr. Niederhuber joined Dr. von Eschenbach at the podium to recognize the outstanding service of Dr. Marvin Kalt as Director, Division of Extramural Activities, NCI, and as Executive Secretary, NCAB. Dr. Kalt began his NIH career at the National Institute on Aging. He became Deputy Director for Extramural Activities, NCI, in 1990, and Director in 1994. Dr. Kalt will join the Bill and Melinda Gates Foundation Global Health Programs as Portfolio Manager in a collaborative effort between the Gates Foundation and NIH to address problems of global health. A special focus of these activities will be infectious diseases such as AIDS, tuberculosis, and malaria.

In his response, Dr. Kalt gave thanks for the support received from NCI and from DEA staff. He recognized the important advisory role of NCAB in the past and in the coming years of transition.

Dr. Harold Freeman

Drs. Leffall and Kripke joined Dr. von Eschenbach to pay a special tribute to Dr. Harold Freeman for his unique and special contributions in the fight against cancer, especially for his distinguished service as Chairman, PCP, from 1991 to 2002. Dr. Freeman is recognized, Dr. von Eschenbach stated, as one of the most respected voices in the call for attention to the inordinate burden of cancer in minority and underserved communities. Dr. Freeman was the chief architect of American Cancer Society (ACS) initiatives in disparities and is the namesake of the Harold Freeman Award. The award is given annually by the ACS to honor those who have made contributions to addressing cancer in underserved populations. Dr. Freeman became Director, Center to Reduce Cancer Health Disparities (CRCHD), NCI, in June 2000.

Dr. von Eschenbach noted that Dr. Freeman's career in Harlem and in all of the venues where he served has been a role model for all, and his leadership continues.

Drs. Leffall and Kripke then presented Dr. Freeman with an award which read: "For your outstanding contribution to the NCI and the National Cancer Program as Chairman of the President's Cancer Panel from 1991 to 2002. By your example of unbridled commitment to help the underserved populations in America, you have helped to guide the NCI, the NCAB, and the PCP towards providing a higher standard of cancer care for all people diagnosed with cancer. You have said many times 'Cancer is a moral and ethical dilemma for our Nation.' This exemplifies your personal core values and provides a glimpse into the conscience of one who has truly answered the call to serve those with cancer. Through your leadership and vision we have sustained new levels of achievement by bringing to the attention of the White House, Congress, and the community the concerns expressed in the voices of real people affected by cancer. The many years you have dedicated to the fight against cancer will serve as an enduring legacy to the PCP and its continued progress against cancer."

In response, Dr. Freeman expressed gratitude for these and described his as a complex journey from his work as a surgeon in the Harlem community to presidency of the PCP, where he had the opportunity to speak to the Nation as a whole. In his journey, according to Dr. Freeman, he moved forward with a sincere desire to understand the universal causes of health disparities and at the same time understand the forces operating in a given community. He thanked all who helped along the way, particularly Dr. Jake Wilson and his staff during his PCP tenure.

V. PRESIDENT'S CANCER PANEL—DR. LaSALLE LEFFALL

Dr. LaSalle Leffall, Charles R. Drew Professor of Surgery, Howard University College of Medicine, Howard University Hospital, added personal congratulations to Dr. Freeman for a well-deserved honor. He introduced Dr. Kripke with a brief history of her past and present offices and accomplishments and welcomed her as a member of the Panel.

Dr. Leffall reported on the May 27–28 Panel meeting in Lisbon, Portugal, the first of three meetings in 2003 to examine the definitions of survivorship and unique issues survivors face related to health care delivery and health outcomes. Among the topics addressed in the Panel meeting were: (1) international definitions of survivorship, (2) secondary needs of cancer survivors, (3) the impact of varied financing and health care delivery systems on survivorship, (4) unique challenges in providing long-term care for survivors, and (5) the role of advocates in the international arena. The first day included an overview of survivorship issues in Europe and the United States with a statistical overview of European survivor populations, a description of the U.S. concept of survivorship, and a report on European quality-of-life issues. Day two addressed cancer survivorship from the perspective of European cancer care providers and advocates.

In all, the Panel heard testimony from approximately 25 speakers over the 2 days. Invited participants represented Northern Ireland, the Republic of Ireland, Great Britain, Norway, Sweden, Denmark, the Netherlands, Switzerland, Germany, Portugal, France, Spain, and Italy. These particular countries were represented because of differences in health care financing systems—ranging from fully socialized to fully private. From the testimony, Dr. Leffall noted, it became clear that in virtually every country, all people diagnosed with cancer have the right to receive treatment and other services by virtue of their citizenship. However, it was not clear that each person received the best available care or received the care on a timely basis. Several themes that surfaced in the testimony revolved around definitions of survivorship, the stigmatization of cancer, effects of treatment, lack of psychosocial

support, and advocacy. The provided testimony will be analyzed for inclusion in the report to the President.

Dr. Leffall reviewed key points that were presented as part of the overview on European survivorship. Dr. Peter Boyle, European Institute of Oncology, presented information and statistics from European Union (EU) countries indicating that a major achievement of the past 10–15 years is the increased emphasis on prevention and cancer control. Success has been achieved among member countries in reducing cancer death rates. The Eurocare Project, an EU-funded program, has the goal of identifying and explaining differences in survival rates. The project covers approximately 100 million people, with cancers in the population approaching 1.8 million. Some of the findings are the great range of cancer survival rates across Europe; the fact that patients in clinical trials represent the highest achievable survival; and a lower risk of death for adult cancers in the United States than Europe, but virtually the same risk for childhood cancers. A new program, the Concord Study, is being funded by the EU to further explore, describe, and explain survival differences on both sides of the Atlantic. The Panel also learned that there are large differences in health care expenditures between countries in Europe, which likely contributes to differences in health outcomes as well.

In another presentation, the changing demography of survivorship in the United States was summarized by Dr. Julia Rowland, Director, Office of Cancer survivorship, NCI. Dr. Rowland reported that the population of survivors continues to grow, with an estimated 9.6 million in the United States and 22.4 million worldwide. For many in the United States, cancer has become a chronic illness. Sixty-two percent of adults diagnosed with cancer today will be alive 5 years from now. This rises to 77 percent for children up to age 14; although it has been shown that this is primarily true for White Americans. For African Americans, the figure is 10–12 points lower. These findings have implications for future research and clinical care.

In the testimony heard by the Panel, Dr. Leffall stated that it became apparent that survivorship is viewed differently in Europe. Recurring themes included: (1) differences in the language of survivorship, (2) the stigmatization of cancer, (3) lack of physician-patient communication regarding long-term side effects of treatment such as cognitive dysfunction, (4) lack of public visibility of survivors, (5) lack of advocacy for survivorship concerns by celebrities, (6) the need for psychosocial support and assistance in the transition to post-treatment living, and (7) lack of counseling or support for families of cancer patients.

One preliminary observation, according to Dr. Leffall, was that issues of post-treatment recovery and support appear not to be fully recognized, although one model for addressing this gap was presented by a physician from the University Hospital of Lund, Sweden. In terms of advocacy, the Panel heard that few groups operate at the European level and that the European community is not accustomed to speaking out in an organized manner. This appears to be changing, however, as evidenced by the success stories of advocacy groups being formed at local and national levels to campaign for change.

Dr. Leffall announced that the next meeting will be held in Denver (September 4–6) to address survivorship issues among children and adolescents. Another September meeting will be held in Austin to address survivorship issues among adults and the elderly. Some of the questions to be considered include: What are the secondary prevention needs of young cancer survivors and of adult cancer survivors? What are the challenges in providing long-term continuity of care and who should provide this care? What are the research issues important to pediatric cancer care and survival and to adult cancer care and survival? What are the specific needs of family and caregivers, and how should these needs be addressed? Dr. Leffall invited comment and suggestions from NCAB members as the Panel works to

refine these questions. In November, the Panel will meet to review its findings on cancer survivorship and develop its recommendations to the President.

Questions and Answers

Dr. Amelie G. Ramirez, Associate Professor, Department of Medicine, Baylor College of Medicine, commented that the taboo associated with speaking about cancer also exists with many of the cultural populations in the United States, for example, in Hispanic communities. She underscored the obligation to help clarify and provide information to those populations to help them better deal with cancer in the future. Dr. Niederhuber added that what the Panel learns will provide direction to the NCI for reaching out to colleagues in other countries to have an impact, as well as for developing programs that will help nationally. Dr. Leffall welcomed ideas in this regard for incorporation in the Panel's final report.

VI. LEGISLATIVE REPORT—MS. SUSAN ERICKSON

Ms. Susan Erickson, Acting Director, Office of Policy Analysis and Response, NCI, listed recent hearings at which NCI staff were witnesses: Dr. von Eschenbach—Appropriation Hearings in April; Dr. Julia Rowland, Office of Cancer Survivorship—Senate Cancer Coalition hearing; and Dr. Scott Leischow, Tobacco Control Research Branch—House Government Reform Committee hearing entitled Potential Reduced Exposure/Reduced Risk Tobacco Products: An Examination of the Regulatory Challenges and Public Health Impact.

Ms. Erickson then reviewed legislation that has been introduced in the areas of comprehensive cancer legislation, health disparities, and breast cancer and the environment. The National Cancer Act of 2002 was introduced by Senator Feinstein, with similarities to the 2003 legislation, but also with the following revisions: the bill of 2003 has a greater focus on cancer prevention, calls for continued funding increases for the NCI, mandates expansion of a National Comprehensive Cancer Control Panel, establishes by statute the Office of Cancer Survivorship, increases funding for breast and cervical cancer screening, and does not call for the FDA regulation of tobacco. In addition to the revisions, the 2003 legislation also calls for strategic plans to identify unmet needs in nine specific areas, includes an extensive section on translational cancer, calls for grants for the development of targeted drugs, establishes a cancer research loan repayment program, and suggests that patient navigator programs be established.

In the area of health disparities, patient navigator legislation was reintroduced in House and Senate bills. Two other pieces of legislation were the Good Medicine Cultural Competence Act and The Hispanic Health Improvement Act of 2003. In the area of breast cancer and the environment, bills that were introduced are The Annie Fox Act, which directs the National Institute of Environmental Health Sciences (NIEHS) to conduct research on breast cancer in younger women, and the Breast Cancer and Environmental Research Act of 2003, which calls for the NIEHS to establish breast cancer and environmental research centers. In regard to the latter, Ms. Erickson noted that an centers initiative has already been published, and the NCI has agreed to co-fund some of the centers.

Questions and Answers

Dr. Niederhuber asked for a clarification of what legislators are proposing in the patient navigator program legislation. Ms. Erickson explained that the many components to the proposed model include the assignment of a navigator to each person diagnosed with various diseases, not just cancer, to help that

person through the diagnosis and treatment stages of the disease. One bill requires that the navigators receive training, but that concept is in the formative stage at present. Dr. Norton observed that a model developed by Dr. Freeman for the Harlem Hospital community has proven to be of value to many people who are suffering through health care disparities and many others who need help in navigating an increasingly complex system. Dr. Freeman explained that the patient navigator concept evolved from national hearings on cancer and the poor conducted in 1989, when he was ACS president. The concept was developed and a model was tested at Harlem Hospital for about 13 years. Approximately 200 patient navigator programs have since been established around the country.

VII. OVERVIEW OF CENTER TO REDUCE CANCER HEALTH DISPARITIES—DR. HAROLD FREEMAN

Dr. Harold Freeman, Director, CRCHD, NCI, reviewed the organization and history of the Center, which is the cornerstone and organizational focus of efforts to reduce the unequal burden of cancer in the United States. In the FY 2000 Bypass Budget, reducing cancer health disparities was included as one of the challenges. The following year, the Office of Special Populations Research was elevated to Center status, with Dr. Freeman as the Director. With the current goal of eliminating the suffering and death from cancer by 2015, the issue has been elevated even higher. Within the NCI, the Center operates under the Office of the Director and relates through this connection to all Division Directors and major Centers.

As an integral part of the NCI, the CRCHD had a total budget in FY 2002 of $20.4M, of which 68 percent was allocated to Special Population Networks (SPNs), 7 percent to SPN pilot projects, 9 percent to CRCHD initiatives; and 16 percent to co-fund a variety of research programs with the Division of Cancer Control and Population Sciences (DCCPS), Division of Cancer Treatment and Diagnosis (DCTD), Division of Cancer Epidemiology and Genetics, Indian Health Service (IHS), and other U.S. agencies. CRCHD strategies are to build an integrated research infrastructure, provide an organizational locus, support research in disparities and health policy, and, ultimately, bridge the delivery gap. A Health Disparities Working Group with representation from the Divisions and the Center for Cancer Research meets monthly to address these issues.

Within the CRCHD, the Disparities Research Branch supports programs that address specific questions pertinent to low-income minority and underserved populations, attempts to develop concepts for new programs with the potential to close the gap between discovery and delivery, and attempts to create a network of partnerships that leverages support for these programs. As an example of the latter, the 18 SPN grants being funded nationwide, which account for 75 percent of the CRCHD budget, have doubled the amount of the NCI funding through partnerships with entities such as Kellogg and Johnson and Johnson. These 5-year grants were awarded in 2000 and have completed a 1-year building effort in Phase I and the 2-year Phase II, which focused on establishing partnerships with NCI Cancer Centers and other institutions, partnering with the NCI Clinical Trials Collaborative Groups to enhance minority recruitment, and improving research training opportunities for minority junior biomedical researchers.

Dr. Freeman briefly elaborated on the SPN pilot project 1-year awards, which were funded in four peer-review cycles during Phases I and II. Of the 148 applications representing 120 first-time minority and underserved investigators, 82 have been awarded after peer review. Moreover, the success rate has improved over the four cycles. Research topics cover a wide area of issues from tobacco cessation to cancer survivor groups.

During Phase III, according to Dr. Freeman, the SPN centers will continue to perform community-based research and develop pilot projects. In addition, efforts will focus on developing investigator-initiated research grant applications from the pilot projects that can be successful in peer review. Geographically, the centers and performance sites are well distributed throughout the country, except for the Midwest. As an example of grantee excellence, Dr. Freeman described Temple University's Asian Tobacco Education-Cancer Awareness and Research Program. Annual SPN summit meetings are well attended and provide opportunities for networking and displaying posters by pilot project investigators.

In the CRCHD's Health Policy Research Branch, cancer health issues are identified and explored to develop a better understanding of the variables, and the findings are evaluated and validated. Strategic recommendations are made and communicated to decisionmakers to inform the process of health policy development. One health policy initiative involves multidisciplinary think tanks recently held on the topics of "racialization" of populations and the health care system and the excessive mortality from cervical cancer as a marker for the health of poor women. Another initiative is the examination with the Director, National Human Genome Research Institute, of the fundamental nature of race as related to genetics and genomics. A third initiative is the trans-NIH lecture series on health disparities. As a result of the cervical cancer think tank, the CRCHD will continue the dialogue with the Center for Medicare and Medicaid Services, Centers for Disease Control and Prevention (CDC), Health Resource Services Administration, Agency for Health Research Quality, the SPNs, and NCI Divisions to close the gap between discovery and delivery.

One future direction for the CRCHD, according to Dr. Freeman, is intervention research to test the patient navigation concept, in an effort to link the primary health care and hospital systems. Pilot projects to add a navigation element to radiation oncology clinical trials already have been established in Rapid City, SD, and Laredo, TX, and four more are in the approval process. In addition, three pilot patient navigator programs have been funded in the Yakima Indian Nation, which will be administered in a way that reflects and is helpful to that particular culture.

Finally, Dr. Freeman noted that the CRCHD is a partner in the model for a DHHS Cancer Disparities Progress Review Group (CDPRG), which has been established in the NCI. The CDPRG will be a model for addressing issues that cannot be solved within one agency.

Questions and Answers

Dr. Moon S. Chen, Jr., Professor, Department of Epidemiology and Preventive Medicine, University of California, Davis Cancer Center, asked what criteria would be used to judge the effectiveness of the CDPRG. Dr. Freeman replied that success of the PRG in influencing the decisions made in all relevant DHHS agencies would, in the final analysis, be measured by the influence seen in cancer incidence, mortality, and survival among Americans.

Dr. Love asked if the SPN Program would be continued beyond year 5, and what next steps would are envisioned. Dr. Freeman explained that the Program would be brought before the Executive Committee with CRCHD recommendations for renewal or modification.

Dr. Freedman observed that the situation with regard to cervical cancer was a good example of the critical disconnect between discover/development and delivery, and he commended the CRCHD approach. He also noted that cervical cancer is an interagency problem, the solution of which would contribute significantly to the 2015 goal. Dr. Freeman commented that the CRCHD believes that cervical

cancer death could also be a marker for other problematic social issues in those communities. Dr. von Eschenbach pointed out that the Cancer Control Planet is an important strategy to integrate NCI interventions, and he asked Dr. Jon Kerner, Assistant Deputy Director for Research Dissemination and Diffusion, DCCPS, NCI, to comment on how this strategy can make an impact. Dr. Kerner explained that Cancer Control Planet is a Web portal to link the products of research and make them more easily accessible to program people for identifying the best science to target high-risk populations. Dr. Kerner then announced a meeting to be held the following day with ACS, CDC, and the U.S. Department of Agriculture (USDA) to follow up on the findings of the cervical cancer think tank. High cancer mortality counties in eight states will be targeted by linking the breast and cervical cancer program outreach with USDA cooperative extension agents who are present in every county. Cancer centers will take a leadership role in the areas of dissemination and diffusion.

Dr. T.G. Patel, Program Chief, Veterans Health Administration (VHA), called attention to VHA's successes in closing the gap in between minorities and majorities in the areas of cancers and heart disease. He suggested this experience as a possible model for the NCI. He also noted that limited access to care contributed to disparities, and that it might be necessary to search for solutions in countries of origin for some of the minority populations.

Dr. Love cited the perception in the lesbian community of limited access to the health care system, and she asked whether sexual orientation would be considered in identifying underserved groups. Dr. Freeman replied that the CRCHD would look at disparities wherever they exist. Ms. Lydia Ryan, Service Line Clinical Director, Children's Healthcare of Atlanta, AFLAC Cancer Center, observed that addressing the disparities issue with patient navigators should prove to have a positive financial impact on health care administration.

VIII. NCI/FDA PARTNERSHIPS AND THE USE OF SERUM PROTEOMIC PATTERNS FOR CANCER DETECTION—DRS. LANCE LIOTTA AND EMMANUEL F. PETRICOIN

Dr. Lance Liotta, Chief, Laboratory of Pathology, Center for Cancer Research, NCI and Dr. Emmanuel Petricoin, Center for Biologics Evaluation and Research, FDA, presented a progress report on the NCI/FDA Clinical Proteomics Program. The mission of the Program is to develop protein micro-analysis technology for direct molecular analysis of tissue cells and serum. Dr. Liotta noted that the technology is being developed to answer specific biological hypotheses about mechanistic questions involving the pathogenesis of cancer in human tissue and blood. New technologies also will be developed for monitoring how drugs work in patients, determining how drugs can be combined for better interaction in the patient, and accomplishing early diagnosis with the information content in the serum proteome. This research is expected to have immediate, ongoing clinical applications.

To date, the technology has been used to identify and sequence 400 proteins involved in pathogenesis and to develop a platform for profiling the phosphoproteome and the phosphorylated state of signaling pathways that are involved in cancer evolution in the individual patient. The latter may lead to new approaches for individualized therapy developed in collaborations with pharmaceutical companies.

A third research focus for this technology is to show that serum protein patterns reflect a pathologic state for virtually every tissue in the body. Dr. Liotta described how this hypothesis was investigated. Technology was developed to monitor the serum proteome in a sample of a patient's blood; use artificial intelligence-type algorithms, the computer, and bioinformatics to search through the informatics patterns in the patient's blood sample; and, ultimately, develop a pattern recognition based on a learning algorithm. The blood sample is subjected to mass spectroscopy to produce a bar code of the

patient's serum proteome, a proteomic image that can be read for early diagnosis or early warning of toxicity. In a parallel effort, Program investigators in Bethesda and Frederick are collaborating with SAIC to sequence every human protein that is present in the low-molecular-weight range that may comprise these patterns.

Dr. Petricoin added that this research is an example of not just an interagency agreement, but also a public-private collaboration. Through a Collaborative Research and Development Agreement (CRADA) with Coralogic Systems, this proteomic approach will be tested on an independent track from the planned NCI clinical trials. The FDA will be overseeing that effort, with the goal of having a 510(K)-approved test to demonstrate the utility and feasibility of the approach.

Dr. Petricoin then presented an update of progress in testing the surface-enhanced laser desorption ionization (SELDI) technology as applied to ovarian cancer study sets. The study sets were supplied by high-risk clinics supported by NCI's National Ovarian Early Detection Cancer Program. At 5 years of followup after serum was collected, a high degree of specificity and sensitivity was found for a proteomic pattern's ability to distinguish between women with no evidence of disease and those with benign gynecologic and non-gynecologic inflammatory conditions. The SELDI approach also demonstrated a high specificity and sensitivity for Stage I ovarian cancers. Dr. Petricoin pointed out that all mass spectra are posted to the public domain, and that the feedback has been received from more than 450 bioinformatics programs worldwide and from extramural collaborators. Additionally, all mass spectra that will be acquired in the clinical trial will be posted in the public domain.

Beyond ovarian cancer, according to Dr. Petricoin, proteomic pattern diagnostics are being studied in lung, breast, prostate, and pancreatic cancers in conjunction with academic collaborators. In the lung and breast cancer collaborations with scientists from Duke and M.D. Anderson, the aim is a serum-based test to distinguish benign lesions from malignancy in conjunction with existing imaging modalities. Preliminary results showed very high sensitivity and specificity of the SELDI-based tests in the sample set of lung sera and fairly high sensitivity and specificity in the sample set of breast sera. These findings, which will be tested in a clinical trial, suggest the feasibility of combining noninvasive serum and imaging tests to increase the positive predictive value (PPV).

A second aim of these preliminary studies is a serum-based test to distinguish cancer where existing biomarker levels lose PPV. Collaborations with University of North Carolina and Louisiana State University scientists in study sets of prostate serum are attempting to develop a test with very high sensitivity to detect cancers. The group also is trying to identify a pattern to distinguish between aggressive and indolent forms of prostate cancer.

A third aim of the studies is to develop a serum-based test to distinguish cancer from normal tissue where no clinically useful marker exists for early detection and where there is high comorbidity from other diseases. Collaborations with scientists from the University of Minnesota are evaluating the feasibility of the proteomic pattern-type test in study sets of serum from cancer patients with and without comorbid conditions of diabetes and pancreatitis. High sensitivity and specificity have been seen in these small, but statistically powered sets.

Next steps in all of the studies will be to test reproducibility between instruments and between institutions, and to expand the study for greater statistical power. Dr. Liotta noted that the first application in the clinic would be secondary screening to add value to the management of the patient, not general population screening. A possible future use of the technology is for monitoring the effectiveness of therapy.

Dr. Liotta continued with a description of the research tools being used for validation and implementation of the SELDI-QqTOF diagnostic proteomics in the clinical setting. The Ciphergen SELDI instrument used for the first studies in the defined study sets was deemed to be inadequate for reliable and reproducible clinical testing of thousands of specimens for a clinical trial. It has been replaced with the high-resolution ABI QSTAR system, which can use the same chips with the individual droplets of serum and has a resolution that is hundreds of times higher. Dr. Liotta noted that independent studies using NCI/FDA serum patterns and the same system to analyze the patterns of ions showed 100 percent sensitivity and specificity in the blinded testing to distinguish normal from ovarian cancer serum.

Dr. Liotta stated that this project has been undertaken to validate the basic hypothesis that tissue pathologic states seem to be reflected in hidden serum proteomic patterns uncovered using an artificial intelligence-based bioinformatics tool that learns the most fit solution. A further hypothesis is that serum proteomic patterns are the product of the unique tumor-host microenvironment and reflect tumor and host interaction. The current strategy is to follow two independent tracks to test this hypothesis. The first is an NCI-based national clinical trial using serum proteomic pattern diagnostics where identity is not needed, to include 510(K) and Pre-Market Application (PMA) submissions. A second track to be conducted in parallel with the trial is a scientific investigation into specific source and identity of the classifiers.

Dr. Liotta reported on progress in implementing the clinical trial, which will apply these findings for public benefit. A Clinical Proteomics Reference Laboratory has been established and outfitted, and Dr. Gordon Whiteley, a nationally recognized diagnostic development scientist, has been hired to oversee operations. The quality systems draft has been developed for evaluating the quality assurance/quality control (QA/QC) and voluminous documents that are necessary for a clinical trial and for FDA requirements. A TECAM robotic processor and the first of three Q-STAR instruments have been acquired and installed, and internal controls and a QA program are being developed. To ensure reliability and reproducibility, software has been developed that has been demonstrated to be capable of quantifying the samples and managing the progress of the clinical trial. To illustrate the challenge, Dr. Petricoin pointed out that, in the trial, there will be 4.5 million data points for each of about 5,000 patients to open up, manipulate, and transport. Upgrades to the high-resolution instrument and other new tools will be needed to ensure a high throughput and easy process.

The regulatory strategy for advancing this research, stated Dr. Liotta, is for the NCI to file a 510(K) for a monitoring claim to compare the serum proteomic pattern diagnostics with CA125, projected to be accomplished by June 2004. A second goal will be to move forward to file validation data as a PMA for high-risk screening in ob/gyn patients who are at high risk genetically or who have an abnormal finding by physical examination or imaging. After screening has been validated in high-risk women and for filing the PMA, the test could eventually be a “home brew” offering under the GMP-CLIA certification held by the NCI. All of the sera are provided by academic collaborators, and the data are returned to them and made publicly available.

In the second and parallel track, according to Dr. Liotta, the source and identity will be investigated of all the ions and markers that have been found in the large numbers of patterns that correlate with disease. The hypothesis is that they are clipped, cleaved, modified proteins that may be derived from the interactions of the complex microenvironment between the host and tumor. At that interface, proteins, cytokines, and enzymes produced from both the host and tumor can interact and produce cleaved products and proteins that may be shed and enter the circulation. Dr. Liotta reported that an investigator in the Clinical Proteomics Reference Laboratory has demonstrated to a high degree of certainty that all of the small-molecular-weight shed and clipped proteins (biomarkers) are bound and

amplified by carrier proteins (such as albumen) and come from every tissue of the body and from all corners of cellular compartments. Dr. Petricoin pointed out that this information can now be used to develop new types of automated enrichment and processing tools for immediately analyzing what is bound to the carrier proteins, a first step in diagnostic signature discovery. The ultimate goal is to collect these biomarkers, analyze the pattern of each one as an individual ion on a mass spectroscopy pattern, and be able to go directly with the high-resolution number to a look-up table for identification.

Dr. Liotta described work being done in a collaboration with Milo Ferrari to develop nanoparticles that can act like albumen to circulate and collect low-abundance biomarkers and amplify low concentrations. He concluded that the hypothesis that the serum proteome contains diagnostic information seems to be supported in all the studies to date. The belief among all of the collaborators is that this is a new paradigm in the identification of early diagnostic tests for cancer. Dr. Petricoin noted that the FDA is also looking at the paradigm for clinical use in the area of early drug toxicity detection and as a surrogate for drug efficacy and followup.

Questions and Answers

Dr. Frank Prendergast, Director, Mayo Comprehensive Cancer Center, Mayo Foundation, asked how metastases and micrometastases would be handled and whether they would complicate analysis. Dr. Liotta explained that the metastases likely would have combination tumor-host microenvironment interactions in the target organ that might differ from those of the primary tumor. The research at this time is testing only the extremes of metastatic or nonmetastatic conditions, not micrometastasis.

Dr. Patel suggested that the serum proteome diagnostics might have an application in kidney diseases. Dr. Liotta pointed out that a collaboration with the National Institute of Diabetes, Digestive, and Kidney Diseases is underway to look at those questions.

To Dr. Norton's question about the importance of the pattern versus dominant points, Dr. Liotta expressed the view that the pattern has greater accuracy than a single marker by itself. He agreed with Dr. Norton that the development of training sets for a bioinformatics approach must be consistent with their intended use. He pointed out that the collaboration with the FDA would help in that regard.

Dr. Eric Lander, Director, Whitehead Institute/Massachusetts Institute for Technology Center for Genome Research, urged high standards and application in the research on proteomic patterns in view of potential problems with reproducibility and reliability in other laboratories and settings.

IX. WORKING LUNCH

Ad Hoc Subcommittee on Confidentiality of Patient Data/Subcommittee on Clinical Investigations

Drs. Ramirez and Armitage Co-Chaired the discussion on issues related to the impact of the Health Insurance Portability and Accountability Act (HIPAA) on research. Dr. Ramirez called on Ms. Mary McCabe, Director, Office of Education and Special Initiatives, NCI, to present an update of Subcommittee actions since the previous meeting.

Ms. McCabe reported on actions taken to implement the Subcommittee's decision to obtain qualitative data from clinical research institutions nationwide on this issue. A letter was sent to Cooperative Group Chairs, Cancer Center Directors, and SPORE Directors asking them to identify key persons in their institutions who could provide information on the scope and depth of issues related to

conducting research under the new regulations. The response was excellent. An online questionnaire is in final stages of development and will be sent to those individuals. Ms. McCabe said the Subcommittees expect to receive information from more than 250 people covering not only clinical trials but also databases, specimen banks, behavioral research, and population-based studies. The information will be synthesized and reviewed by the Subcommittees and presented to the NCAB.

HIPAA and the Use of Tissue

Dr. Sheila Taube, Associate Director, Cancer Diagnosis Program, DCTD, and Dr. Roger Aamodt, Chief, Resources Development Branch, DCTD, gave an update of the impact of HIPAA on the use of human tissue in the translation of research results to the clinic in the areas of both interventions and diagnostics. Dr. Taube began by reviewing the importance of tissue specimens in recent breakthroughs in targeted therapies such as Herceptin and Gleevec, comprehensive molecular analysis such as proteomics and expression arrays, and pathways analysis (pharmacogenomics). For all these breakthroughs, hypotheses were generated in model systems, but the ultimate testing depended on the availability of human tissue and the clinical data associated with them. She reviewed the technology of using tissue microarrays (TMAs) as a research tool to show the efficiency and cost- and tissue-saving characteristics of TMAs and how they can be designed to test different hypotheses. Because the most valuable specimens are those with associated clinical data, HIPAA regulations have an impact on their use in any format. But complications and problems increase when TMAs are used because of the large numbers of specimens on a single slide.

Dr. Aamodt reminded members that HIPAA legislation in 1996 mandated that the DHHS develop a rule for dealing with privacy issues if Congress did not act. As a consequence of congressional inaction, the HIPAA Privacy Rule was enacted in December 2002 by the DHHS and became effective in April 14, 2003. Dr. Aamodt reviewed the differences between the Common Rule 45 CFR 46, which covers only federally funded research and focuses on protecting human subjects, and the new Privacy Rule, which applies to the use of protected health information in all "covered entities"—any organization that handles patient information related to billing.

Under the Privacy Rule, there are new considerations if data are to be used in clinical research. Existing studies in which informed consent or a waiver was granted before April 14, 2003, are exempt from HIPAA regulations until a new consent is required. However, a number of institutions chose not to accept "grandfathering." Under the Privacy Rule, data needed to establish a tissue bank or research database can be authorized by patients; however, a specific authorization from each of the patients involved is needed to use the data in a specific study. Other considerations relevant to the use of clinical specimens and data include the provision for a waiver of authorization that can be granted by an Institutional Review Board or a privacy board equivalent and the provision for de-identification of data by removing 18 specified identifiers. Another, potentially more useful provision, is the limited data set that requires the removal of 16 identifiers and a signed data-use agreement.

Dr. Aamodt explained that the issue in terms of tissue microarrays is that authorization would be impractical to obtain for the several hundred cases on each slide and for each individual study. He suggested that the best solution would be to use the limited data set with data-use agreement, which would allow retention of cardinal information and free use of the data if dates are not needed.

Survey Update

Dr. Ramirez reported that the informal public comment inquiry described by Ms. McCabe will be sent to the cancer research community to elicit comment on the implications of the HIPAA Privacy Rule on clinical research. She recommended that another question be added with regard specifically to tissue microarrays. The comments received in response to the inquiry will be analyzed and considered by the NCAB for transmittal to the DHHS for further discussion or policy interpretation. This is an agenda item for the September NCAB meeting.

X. ESTABLISHING THE NCI VOCABULARY AND BIOINFORMATICS INITIATIVE—DRS. ANNA BARKER AND KEN BUETOW

Dr. Anna Barker, Deputy Director for Strategic Scientific Initiatives, NCI, explained that this topic is a follow-on to discussions initiated at the previous Board meeting and represented an update of the broad bioinformatics initiative that the NCI has undertaken, including the vocabulary initiative and a specific pilot project. NCI's ability to collect, translate, transfer, and use information fuels and facilitates its activities in moving from basic science to development, clinical trials, and ultimately, regulatory phases and commercialization. The Institute is in a unique position to use cancer data and apply them to help reach the 2015 goals set forth by Dr. von Eschenbach.

Dr. Ken Buetow, Director, National Cancer Institute Center for Bioinformatics (NCICB), provided an overview of activities that extend the efforts of the NCICB. There has been an explosion of new cancer-related biomedical information from unprecedented numbers of clinical trials, proteomics work, sequence work, molecular signatures, large-scale numbers of preclinical models, animal models, new modeling approaches at the molecular level, and so on. The NCI has put in place a rich collection of research platforms, or infrastructures, for the generation of this information, including the Cancer Centers, SPOREs, Mouse Models for Human Cancer Consortium, Cancer Genome Anatomy Project, Cancer and Molecular Analysis Project, Director's Challenge for Molecular Pathology, and Early Detection Research Network.

Dr. Buetow noted that one problem associated with this sophisticated collection of research platforms, however, is the immense, diverse, and complicated collection of different types of information that cannot communicate with different research components. It is difficult, within these research infrastructures, to translate information from one platform to another. Genomicists, clinicians, proteomicists, and other researchers speak different languages, and each group generates a different collection of data that may or may not be interpretable by other groups. These platforms must be integrated, and these data must be synthesized into information and translated into knowledge. Failure to do so likely will compromise the 2015 goal of eliminating death and suffering from cancer.

As a result of these needs, the NCICB was created with a mandate to build a common architecture and common standards to facilitate this integration of biomedical information and its translation among the various research domains. The Center will bring disparate research communities together by building a common infrastructure and by recognizing the economy of scale that comes from having a common underlying information technology foundation on which to build these programs. It was chartered to provide support for cancer genomics, molecular signatures, preclinical models, mouse models of cancer, and clinical trials.

Dr. Buetow compared the NCICB to a home entertainment system, in that it is modular (a collection of individual components), has defined connections, includes a rich collection of media that can

be translated, is both expandable and updateable, and allows for new technology to easily "plug and play" with the existing infrastructure/system. Components of the NCICB include standards that interconnect biomedical information systems, a common vocabulary generated on an NCI-wide basis, common data elements, and common data models that facilitate the communication of data from one form to another. The NCICB also has: (1) markers that allow it to share an integrated system or components of an integrated system out; (2) a module that would support the collection of primary clinical trials data; (3) infrastructure that supports molecular pathology and capturing cancer images; (4) a database to capture a variety of preclinical model data; and (5) infrastructure that allows for capturing the details of experiments that were performed. These activities have taken place in the context of a framework of open source, open access tools that are available through NCICB's, Web infrastructure. Dr. Buetow noted that the NCICB is in its infancy, and there is much work ahead.

Dr. Buetow described the Cancer Biomedical Informatics Grid, or CaBIG, a collection of interconnected data sources intended to support the community in the area of cancer biomedical informatics research. The goal of this widely distributed informatics platform is to take data generated from a variety of diverse research disciplines throughout the cancer research spectrum and make them available, integratable, and redistributable through a variety of different institutional nodes. CaBIG will connect components built by the NCICB as well as components built by the cancer research community and the larger biomedical research community as well and integrate these applications through a common infrastructure.

The NCICB hopes to develop a shared vocabulary, data elements, and data models that build on existing infrastructures, recognizing that these infrastructures will need to be extended. An additional goal of the NCICB is to develop a common standard so that new applications and infrastructures can "plug and play" with existing systems. It is hoped to enable a network of interconnected applications across centers. To that end, the NCICB has developed a pilot project that includes individuals who are willing to participate and share infrastructure, applications, and data. The NCI will provide staff, training, and/or other resources to support the pilot participants in building out, extending their work, and contributing to the larger CaBIG. This project will work with and be developed through guidance from advisory groups such as the NCAB, American Association of Cancer Institutes, AACR, ASCO, and others.

The goal is to complete an interconnection of many Cancer Centers (and, possibly, other institutions) with the collection of data and resources. The project has already started, with Requests for Quotes being released for support and other background activities. Meetings are planned for this summer to discuss the CaBIG initiative with NCI-designated Cancer Centers. It is anticipated that pilot participants will be selected starting in early fall of this year. The NCICB then will work with Cancer Centers to develop business plans, establish individual working groups, and develop strategies for moving forward. Communication portals for sharing resources, infrastructure, applications, and data will be established at this time as well.

Dr. Buetow noted that this project likely will meet with some early successes, because there already are many components in place and there already are strategic partnerships established between groups and the NCICB. An assessment and evaluation of the CaBIG is expected to be completed as early as the end of 2004, at which point decisions can be made as to whether it is appropriate to extend these activities and expand to include other groups.

Questions and Answers

Dr. Prendergast asked whether NCICB's products will be open source. Dr. Buetow replied that anything generated by the NCICB will be open source and open access. Dr. Freedman noted that to obtain a successful product ultimately will require crossing organizational barriers, and asked what incentives the NCICB offers participating organizations. Dr. Buetow explained that those organizations that participate will have early access to technology and data that they would not otherwise have access to; they also will be part of a community that is taking part in a new paradigm of scientific research. The NCICB also will help to defray some of the costs for groups choosing to participate in the pilot project.

Dr. Chen commended Dr. Buetow and colleagues for their efforts and asked for official endorsement from the Board in support of these NCICB activities, which was granted by Dr. Niederhuber. Dr. Norton asked whether the NCICB will be developing an instruction set so that as new technologies are developed, they can be compatible with the grid. Dr. Buetow explained that the NCICB will be doing so, and that it is a critical part of the Center's activities. One challenge will be developing a document that can be understood at the level of a bench researcher, rather than at the level of an advanced computer programmer.

XI. SUBCOMMITTEE ON PLANNING AND BUDGET: BYPASS BUDGET UPDATE—MS. CHERIE NICHOLS AND MS. KATHIE REED

Ms. Cherie Nichols, Director, Office of Science Planning and Assessment (OSPA), NCI, provided an update on external participation in the Bypass Budget review process. A solicitation was sent to approximately 480 individuals and organizations (more than double the normal amount) to review the 2004 Bypass Budget. Additional individuals also were contacted by the champions of the Bypass itself and asked to review and provide input on specific areas. Individuals were asked to comment particular chapters. They also were asked to read the goal statement and suggest any revisions, particularly focusing on discovery, development, and delivery that the NCI is trying to build into its strategic planning process. In addition, these individuals were asked to: (1) suggest any additional objectives, (2) identify activities that are the most critical for moving forward, and (3) identify potential opportunities for partnerships and synergy.

Ms. Nichols reported that the Subcommittee on Planning and Budget received responses from only 38 individuals, and there is a need to develop approaches for more effectively soliciting input from the community in the future. The individuals asked to review the Bypass Budget did identify some important themes, such as: (1) forming partnerships both inside and outside the government; (2) enhancing innovation and synergy; (3) integration across discovery, development and delivery; and (4) information and resource sharing.

Ms. Nichols noted that the Board can help the Subcommittee to determine which themes are most important as the NCI moves forward in its 2015 goal and strategic planning. She identified the following promising areas of emphasis: (1) develop new agents for pediatric cancer treatment and prevention; (2) work with state and local government agencies as well as other appropriate entities such as the IHS to address barriers to enrollments to clinical trials; (3) streamline the Cancer Genetics Network to generate high-impact, hypothesis-driven research as opposed to the continuing large-scale core patient recruitment in the absence of research hypotheses; and (4) form partnerships with Comprehensive Cancer Centers to leverage resources for assessing targeted agents in early stage clinical trials using approaches such as immunochemistry, gene chips, and proteomic platforms. Ms. Nichols noted that the individuals who did respond expressed their appreciation for the opportunity to comment on the Bypass Budget at the

formulation stage, and this activity precipitated more dialogue between the champions and the external community.

To refine the process for the 2005 Bypass Budget, individuals will have a longer period of time during which they can provide input (the 2005 Bypass Budget will be sent out in November, and individuals will have until January or February to provide comments). Other refinements may include increasing communication activities through the use of the Internet, combining with other activities such as NCI Listens, and holding regional meetings. Ms. Nichols asked Board members for their suggestions on increasing the participation and response rate when external individuals are asked to review the Bypass Budget in the future.

Dr. Love suggested emphasizing the deadline for responding back to the Subcommittee and sending a reminder to individuals 1 week before their responses are due. Dr. Norton noted that the Subcommittee is interested in the issue of homogeneity versus heterogeneity (e.g., are there consistent themes that run through a lot of the concerned groups, or is each looking out for their own areas only?). He noted that soliciting input on the Bypass Budget in this manner was a mixed success because the input that came in was of extremely high quality, but it was very limited and many of the individuals/ organizations that complained the most about not having adequate input did not respond to this very clear request for information. Determining why those who clearly expressed an interest to have some impact on this and did not respond is important in guiding the Subcommittee in terms of advising the Board on how to react to the situation.

Dr. Lander suggested that in addition to sending a letter, using the Internet—specifically, developing a Web site that better prepares institutions for generating a response and tying it to a specific time (e.g., spring)—might be an effective approach. Ms. Marlys Popma, an independent consultant, agreed, noting that it may be helpful to hold regional meetings to encourage participation, which also would present an opportunity for individuals to verbally explain what they think should be in the Bypass Budget. Dr. Norton asked if there was any support for determining why individuals did not respond. Dr. Lander responded that it may be worth asking a few individuals why they decided not to respond. Ms. Nichols asked if the Board could officially sponsor future solicitations for input on the Bypass Budget or take some other active role.

Dr. Niederhuber suggested that the lack of responses may be related to the effort undertaken to generate responses and the frequency of reminders, noting that it is difficult to solicit feedback unless there is a significant effort put forth. He further commented that it may not take many responses to identify the homogeneity and be confident that there has been a good response. It is unlikely that there will be many ideas put forth that have not already been suggested by the NCI, the network of researchers connected with the NCI, and the extramural community. Dr. Norton added that with the support of the NCAB, the Subcommittee will take it upon itself with NCI staff to look into this more carefully and report back to the Board. Dr. Niederhuber added that it is critical that this process and the ideas that NCI receives from the community regarding the Bypass Budget integrate with NCI's internal planning.

Ms. Kathie Reed, Branch Chief, OSPA, NCI, provided the Board with an update on the framework of the 2005 Bypass Budget, noting that the priority areas that that will be covered this year are the same as the 2004 Bypass Budget. In addition, there will be careful consideration and emphasis on integrating the Bypass Budget with NCI's 2015 strategic planning efforts. Ms. Reed presented a chart showing how the priorities of the institute—both those identified in the bypass budget and those associated with the 2015 long-range plan—fit together along a critical path of discovery, development, and delivery that will help achieve the 2015 goals.

For example, molecular epidemiology and focusing on a better understanding of causes of cancer is a priority area for the 2015 goals, and for the Bypass Budget, the emphasis on genes and the environment covers much of what the NCI will be looking at with regards to molecular epidemiology. Another 2015 priority area, integrative cancer biology, will largely focus on the macroenvironment, which also is a Bypass emphasis area. To support these efforts and integrate with them as the NCI moves forward, there are public health emphasis areas, such as quality-of-care, disparities, cancer survivorship, and tobacco and tobacco-related cancers. In most cases, these activities that run across the full continuum of discovery, development, and delivery.

Ms. Reed noted that although there is not an area of emphasis for NCI's intramural program in the Bypass Budget, it clearly plays a very important role in all Bypass areas. She identified cancer imaging and molecular sensing as a key area of emphasis as well, not only in terms of using these techniques and research for intervention development, but also for the delivery of interventions. Bioinformatics is the integrator for all of these areas, not only for the basic research, but also at the other end of the continuum, delivery. Communication and dissemination is another key component to ensuring that researcher-researcher communication takes place, especially in an interdisciplinary environment. It is important that the NCI uses the best available technologies and approaches for communicating with and among the physician and patient communities. Ms. Reed concluded her remarks by noting that efforts are underway to integrate all of these topic areas in the Bypass Budget this year to make it more of a one-plan approach, as opposed to separate plans, and at the same time to make the case for the budget increases that NCI needs as it moves into the future.

Questions and Answers

Dr. Kripke commented that the scientific priorities are comprehensive and cover much of the current agenda, and suggested that studies of normal tissue development be added as a priority area for the 2005 Bypass Budget. She explained that one cannot learn much about the process of carcinogenesis by studying the end product, the cancer cell. Although there is a focus on interactions between cancer cells and the microenvironment, which is important, there are equally important advances being made in tissue development and tissue differentiation in the development of normal tissues. These advances have significant implications in terms of applications for scientific breakthroughs in cancer biology and carcinogenesis.

Dr. Dinah Singer, Director, Division of Cancer Biology, responded that an increased understanding of the factors leading to tissue development likely would come under the rubric of the category of cancer cell and the microenvironment. Signatures of the cancer cell was the original Extraordinary Opportunity that has been enhanced to expand understanding beyond the cancer cell itself to the surrounding microenvironment, included in these efforts is a greater understanding of normal tissue development. Dr. Kripke responded that renaming the category as "integrated cancer and tissue biology" would better capture these activities. Cancer and its microenvironment are very different from the processes that regulate normal development of the mammary gland, for example, which goes awry in different directions in the development of cancer. Ms. Reed added that this input has come from many disease-specific Progress Review Reports as well, and that disease-specific research is a component of what is covered in the Bypass Budget.

Dr. Prendergast commented that little attention is given to the biology of palliation, especially the biology of pain, and cancer pain in particular. Many patients have told him that their worst fear was the trauma of cancer-related pain. Although the field has advanced tremendously, there is a great deal to be learned. Very little is known about pain and cancer—whether it is neuropathic, inflammatory, or a

combination of both—and how it arises. He suggested that the Board give serious consideration to how well the NCI supports research on pain mechanisms.

Additional Discussion of the Director's Report

Based on the presentation given earlier in the day, it was decided to dedicate additional time to further discuss the report from the Director, NCI. Dr. von Eschenbach discussed some of the parameters centered around the concept of planning the Bypass Budget, noting that he was not overly distressed by the low response rate discussed by Ms. Nichols. It is important to pursue multiple avenues for gaining input into this process, and in addition to this mechanism of requesting a response to the Bypass, a number of additional approaches have been implemented, including a series of focus groups to help define some of the scientific challenges and what needs to be done to continue expanding the understanding of cancer from a biologic perspective. It is important to go beyond simply looking at an annual business plan and move toward an examination of NCI's long-range implementation process.

He also discussed other NCI planning activities, noting the importance of redeploying currently available resources, with the recognition that new initiatives will not necessarily always be able to be accommodated by the expectation of additional new resources. In managing NCI's portfolio, there should be an examination of opportunities to leverage existing resources and find partnerships as well as other sources of support. Dr. von Eschenbach described one initiative from a funders conference that is beginning to bring together agencies, groups, organizations that are funding cancer research in a particular area to examine NCI's portfolios and the way it is utilizing resources so that NCI's activities complement the cancer research activities of other organizations.

The NCI is searching for partnerships in additional areas to examine developmental biology, structural biology, and other areas. In addition, when looking at topic areas such as symptom management, palliative care, and pain control, the NCI is using a quality-of-life perspective and looking at them from the point of view of identifying the biologic underpinnings of the phenomena. In essence, these issues center around the host interaction and reaction to the tumor, and NCI's approach is a comprehensive biologic approach as well as an understanding of how to improve quality-of-life. Furthermore, Dr. von Eschenbach explained, the NCI is driving this from a very fundamental understanding of mechanisms, because understanding these mechanisms is at the core of the biomedical revolution and the opportunity to manage cancer and other diseases.

Work also is being done to examine mechanisms in the planning process that will enable the NCI to move resources across the Institute in a much more effective way. There are programs that may be initiated in one particular area (e.g., the National Lung Screening Trial), but these programs must be viewed in the context of how, after a significant initial investment, resources can be tapered and shifted to another emerging opportunity (e.g., further development of the bioinformatics platform).

The NCI welcomes and embraces interaction with the community to help provide wisdom and insights as to how the Institute can most appropriately direct resources and continue to drive the opportunity of discovery moving to the development of interventions and the delivery of those interventions. Even in the delivery of these interventions, new knowledge and understanding of the biology and phenomenon of cancer are evolving and being developed.

There will be an increased focus on the strategic opportunities associated with NCI's Frederick facility and how it might be reconfigured and redeveloped around emerging technology. The Clinical Center on the Bethesda Campus is scheduled to reopen in approximately 1 year. There are a number of

opportunities from a translational research perspective associated with the Center, which will be an area of significant emphasis in the coming year. At the NIH-level, another important activity is the re-engineering of the clinical research infrastructure.

Additionally, the NCI is focusing on work force development and the many challenges associated with training, recruiting, and developing investigators, particularly the clinical investigator and the physician scientist. Work also is being conducted to examine mechanisms by which scientist investigators will be able to be connected with and have the opportunity to relate in a more effective way with clinical investigators, translational investigators, and population scientists.

Dr. Freedman noted that investigators have looked at the NCI as one of the main resources for the availability of investigational agents through a CRADA or through development within the Institute. He asked whether the NCI plans to continue playing this role, or whether investigators will have to rely on industry for these needs. Dr. von Eschenbach responded that the NCI will continue to remain engaged in this role, and added that drug development is an important research opportunity for the NCI.

XII. PLANS FOR CANCER INFORMATION SERVICE—MARY ANNE BRIGHT

Ms. Mary Anne Bright, Director, Cancer Information Service (CIS) Program, Office of Communications, NCI, provided an overview of the CIS in light of the fact that it is about to recompete this contracts this coming year with award and start-up in October of 2004. Two weeks before this Board meeting, Ms. Bright presented this material to the Executive Committee, which approved a concept for the reorganization of the CIS. She noted that until the actual solicitation is released, this is a draft concept, and she encouraged the Board to provide comments/input.

The CIS is in its 26th year and has grown into a strong, sophisticated program with a national infrastructure. The CIS has three program areas: (1) information service, (2) partnership program, and (3) research initiative, all of which align with NCI's focus on discovery, development, and delivery. During the past 10 years, the CIS has worked extensively in health communications research in the area of discovery in an effort to collaborate with communication researchers on studies that test strategies to improve communication with the public. In terms of development, the CIS has developed a number of important interventions, including a new and effective partnership model, the ability to handle calls on tobacco cessation, the operation of Spanish call centers, and a quality management program as well as a comprehensive evaluation plan for the CIS. CIS' strongest area is delivery. Through both its partnership program and information service, the CIS handled approximately 2 million inquiries last year. Currently, the CIS is partnering with about 900 trusted state, regional, and national organizations. The CIS works with its partners to plan, conduct, and evaluate results-focused projects that reach minority and medically underserved populations.

The CIS operates 14 full-service regional offices that operate the information service and the partnership program (with the exception of the CIS Hawaii Office, which is operated as a subcontract and currently only operates a partnership program) as well as conduct research within CIS' research initiative. Through these 14 contracts, the CIS takes telephone calls on cancer, as well as calls on tobacco cessation and Spanish-language calls. Recently, the CIS began providing real-time information to the public via instant messaging over the Internet, which has broadened its reach to global proportions. Additionally, the CIS has started to answer e-mail inquiries that come through NCI's Web Site.

The CIS research portfolio includes 36 investigator-initiated health communication studies, the majority of which are NCI sponsored, that span the cancer continuum from studies on cancer screening to genetic testing, risk communication, nutrition, tobacco control, and cancer treatment. The CIS also has a

longstanding history of forming collaborations with organizations that share NCI's vision and reach underserved populations. As part of these partnerships, the CIS disseminates information and tailors it to specific populations, increases public awareness of the NCI, and provides organizations with technical assistance so that they can inform and educate their populations about cancer. Ms. Bright described some of these partnerships, including CIS partnerships with the Intercultural Cancer Council and the Asian American Network for Cancer Research and Training.

Ms. Bright also described CIS activities in support of NCI initiatives and priorities, including: (1) working with various NCI Divisions on clinical trials recruitment and discussing and translating clinical trials to the public, with an emphasis on minority populations; (2) working with the DCCPS to enhance NCI's ability to reach the public with evidence-based tobacco cessation programs; (3) collaborating with a prominent health communication researcher who is using the CIS as a laboratory; and (5) working to reduce cancer health disparities with all 18 SPNs.

Ms. Bright explained that current plans for reconfiguring the CIS are based on cancer health disparities and using advances in technology. The proposed concept is to award 15 CIS contracts for CIS Partnership Program Offices. These Offices then would have the opportunity to compete for becoming one of four CIS Coordinating Centers. These Coordinating Centers will have relatively similar population sizes and will provide support for and coordination of the critical functions for a cluster of the surrounding partnership contracts. As part of CIS' reconfiguration, the Hawaii Office will be computed as its own Partnership Office and will cover the State of Hawaii as well as the Pacific Territories. It is anticipated that CIS partnership staff will continue to work closely with the Cancer Centers, particularly in terms of outreach activities.

The project cost to operate the current cycle of 5-year CIS projects is estimated at $20M for the first year, and $24M by year 5. For the next contract cycle, under the proposed CIS reconfiguration, costs for the first year would be approximately $17M, increasing to $21M by year 5. While reducing costs, the proposed concept also will promote competition and retain the strengths of the CIS without fracturing any longstanding partnerships. It is planned to issue the final solicitation in November and award the contracts, with start-up in October.

The concept was posted on the Research Contracts Branch Web Site and comments were solicited. Over a 2-week, period input was received from 40 individuals, including technology vendors, SPN partners, CIS managers, Cancer Center Directors, and research collaborators. Three focus areas emerged from these comments. The first was a concern about consolidating from operating three Spanish call centers down to one. Ms. Bright reaffirmed CIS' commitment to providing service to Spanish-speaking populations, noting that the CIS will ensure that these audiences are aware that the CIS can be reached via a 1-800 telephone number as well as the Internet. Currently, and for many years, CIS' Spanish call volume has represented approximately 2 percent of its total calls, depending on the office. There will be a strong emphasis in the one center that will support Spanish calls to provide adequate levels of training and adequate oversight of quality for the calls.

Ms. Bright noted that the second area of concern noted from the solicited comments was the impact on research. She emphasized CIS' strong commitment to the continuation of health communications research, noting that the CIS recently hired a Ph.D.-level staff person to help draft a strong national research agenda. The third area of concern was consolidation of the four Coordinating Centers.

Questions and Answers

Dr. Ramirez noted that the CIS has been an effective vehicle for the NCI in maintaining communications with the public. She asked what the basis or justification was for CIS' pending reorganization. Ms. Bright replied that addressing cancer health disparities, population demographics, continuing partnerships, and improving program efficiencies using technology all factored into the decision, which also was made partly on the basis of a formal assessment of the CIS. Dr. Ramirez followed up by asking whether there was any evidence that the reorganization would be more effective than CIS' current organizational structure. Ms. Bright responded that there is evidence that the CIS will be more effective in putting an emphasis on cancer health disparities and giving partnerships the resources needed to conduct cancer control activities. She added that consolidating the telephone system will involve a seamless transition of service to users of that system. The CIS must build a strong infrastructure between the Coordinating Centers and the Partnership Offices with which they will be directly working.

Dr. Freedman asked whether cost sharing was a component of CIS' reorganization and about the responsibilities of the Coordinating Centers. Ms. Bright noted that the CIS has implemented some creative cost-sharing strategies over the years and that the Cancer Centers afford the CIS with space and facilities within which to work. She also explained that the Coordinating Centers will not be responsible for overseeing the performance of the other regional Partnership Program Offices; rather, their purpose is to coordinate, provide training, assure quality, and provide the support to these offices.

Dr. Niederhuber noted that as a former Cancer Center Director, he felt that it would be a loss if a CIS office was not physically present at a Center, particularly in terms of that Center's outreach and education programs. Ms. Bright asked whether Dr. Niederhuber saw any disadvantages of the CIS not being located directly on site at the Center given the shift in emphasis such that partnership is now the foundation for the Program. Dr. Niederhuber responded that in his experience, because the CIS office was physically a part of the Cancer Center, the individuals employed as part of this contract felt very much a part of the Cancer Center. It would be a significant loss of they were no longer part of the Cancer Center operation. In response to another question, Ms. Bright explained that the Partnership Office staff will be involved in both research and partnership activities.

Dr. Huerta expressed concern that the justification to decrease the number of Spanish call-in centers appeared to be based on the fact that only 2 percent of the phone calls to the CIS are from Hispanics. He noted that General Motors had a similar problem some time ago. They found that Hispanics were not, as a group, purchasing many Chevrolet trucks. Rather than decreasing the number of dealerships or advertisements, General Motors heavily advertised Chevrolet trucks, increased the number of dealerships, and hired bilingual sales persons. Chevrolet trucks now are the most popular make of truck among Latinos. Dr. Huerta stated for the record that he is concerned about and opposed to the decrease in the number of Spanish call-in centers.

Dr. Freedman asked about the impact of the public's increased use of the Internet on CIS activities. Ms. Bright explained that there has been a shift in information-seeking behavior, which is why it is important to have multiple access points for the public to reach the CIS. The CIS currently handles approximately 1,000 online instant messaging sessions per month, and that number is expected to increase. The ability to send tailored information to users via e-mail is another important feature that is expected to become more heavily utilized. The CIS is very cognizant of the Internet as an access point for reaching the public, and the program intends to continue to build on its ability to reach the public in that manner. Ms. Bright also noted that there has been a decrease in telephone access, with a

corresponding increase in other access methods. She noted that the CIS is accessed via telephone by between 2 and 18 percent of callers from underserved populations, depending on the site.

Dr. Prendergast noted, however, that the Internet is not heavily used by most underserved populations. He also voiced concern about dislocation associated with reducing the number of Coordinating Centers and increasing the number of Partnership Offices. Additionally, he expressed worry about redundancy, because one of the values of having regional centers is the fact that many routine functions can be centralized.

Dr. Niederhuber agreed with Dr. Huerta's earlier comments regarding a certain percentage of usage being an inappropriate measure on which to downsize the number of Spanish call-in centers. He added that the Board could ask Dr. von Eschenbach to reevaluate this issue. Dr. von Eschenbach confirmed with Ms. Bright that reducing the number of Spanish call-in centers would not reduce the CIS' capacity to reach the Hispanic community or impair their ability to call. This effort would realign resources in a hopefully more efficient and cost-effective manner, and would not downsize CIS' capacity to be responsive to requests. Dr. Lander noted that one important concern is why only 2 percent of the calls are in Spanish. He asked about what, if any, experiments the CIS has conducted to determine the effectiveness of increasing awareness. Ms. Bright responded that many of the regional offices have run regional promotions with partners, but these have not been compared with a control. She also noted that there have been some innovative approaches to trying to increase calls from Hispanic populations. There also should be an emphasis on the partnership program—working with the organizations that reach those individuals to get the information to them, as well.

Dr. Huerta also expressed concern about having only one Spanish call-in center, particularly in light of time zone differences. If the one Spanish call-in center is located on either coast, when a caller from the opposite coast calls in, there will be a 3-hour time difference and the office may be closed. He added that the CIS could benefit from a comprehensive, consistent outreach program that relies on modern technology, possibly using advertising. Ms. Bright noted that the CIS does not have an advertising budget to conduct a consistent, continuous promotion of the program nationwide. Rather, it has relied on its regional offices to do so. She also explained that the CIS intends to have extended hours for offices to cover time zone changes so that Spanish-language calls are handled. It was agreed that the CIS would further look into the number of offices handling Spanish callers and would report back to the Board with a presentation on CIS' outreach plan, with a particular focus on minority communities.

XIII. NCAB SUBCOMMITTEE REPORTS

Dr. Niederhuber asked the Chairs of each Subcommittee to make a brief report to the Board, if they had any topics of discussion. There were no reports given by any of the Subcommittee Chairs, and no new business was conducted at this time.

XIV. NCAB RETREAT REPORT AND FUTURE DIRECTIONS—DR. JOHN NIEDERHUBER

Dr. Niederhuber provided some brief comments on the NCAB retreat, which he characterized as a very productive day of discussion about the NCAB and its desire to be very supportive and work directly with the Director, NCI, and with the Division Chiefs to help in whatever way possible. Dr. Niederhuber will be appointing a special working group to address some of the specific issues that were raised at the Retreat, and the working group will report back at the next Board meeting. Dr. Niederhuber also will report back to Board members to review discussions from the Retreat before the next Board meeting.

CLOSED SESSION

This portion of the meeting was closed to the public in accordance with the provisions set forth in Sections 552b(c)(4) and 552b(c)(6), Title 5 U.S. Code and 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. Appendix 2).

Members were instructed to exit the room if they deemed their participation in the deliberation of any matter before the Board to be a real conflict or that it would represent the appearance of a conflict. Members were asked to sign a conflict of interest/confidentiality certification to this effect.

The en bloc vote for concurrence with all other IRG recommendation was affirmed by all serving Board members present. During the closed session of the meeting, a total of 2,153 applications were reviewed requesting support of $604,023,928. Funding for 2,151 of those applications was recommended at a level of $601,174,633. The meeting adjourned at 5:30 p.m.

XV. ADJOURNMENT—DR. JOHN NIEDERHUBER

There being no further business, the 126th meeting of the National Cancer Advisory Board was adjourned at 5:30 p.m. on Tuesday, June 10, 2003.

September 9, 2003 /s/

Date John E. Niederhuber, M.D., Chair

September 9, 2003 /s/

Date Paulette S. Gray, Ph.D., Executive Secretary