THE CANCER LETTER

Vol. 20 No. 38
Oct. 7, 1994

Price $225 Per Year US, Canada
$250 Per Year Elsewhere

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NCI, Groups Disagree Over Recovery Of Funds In Cases Of Scientific Fraud

In its attempt to impose more stringent and well-defined rules for the clinical trials cooperative groups, NCI has encountered a legal question that has, so far, defied resolution:

If an investigator affiliated with a cooperative group commits scientific misconduct that results in invalid research, who should pay back the government for the misspent research funds?

Under an NCI proposal, the institution where the cooperative group is based would be financially responsible for the actions of investigators at member institutions.

"If Boeing got a defense contract and subcontracted part to another firm, and that firm committed fraud, then the government would hold

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In Brief

Bishop, Schein, Vaitkevicius Named To NCAB; Hopkins Breaks Ground For Larger Center

MORE APPOINTMENTS to the National Cancer Advisory Board were announced by President Clinton last week to fill five available positions. They are: **J. MICHAEL BISHOP**, of the Univ. of California, San Francisco; **PHILIP SCHEIN**, president and chief executive officer, U.S. Bioscience Inc., and **VAINUTIS VAITKEVICIUS**, president of the Michigan Cancer Foundation. **ALFRED GOLDSON**, chairman of the Dept. of Radiotherapy at Howard Univ. Hospital, attended the NCAB meeting this week as a consultant. . . . **JOHNS HOPKINS** Medical Institutions broke ground last month for a planned comprehensive cancer center. Scheduled for completion in 1997, the building will expand clinical and research space and bring under one roof many of the departments involved in patient treatment. Maryland Gov. William Donald Schaefer has committed $30.5 million to the project. . . . **LOUIS WEINER** has been appointed chairman of the medical oncology department in Fox Chase Cancer Center's division of medical science. He succeeds Robert Ozols, who became senior vice president for medical science last year. . . . **PEGGY MEANS** has been promoted to executive vice president and chief operating officer at the Fred Hutchinson Cancer Research Center. **KAREN LANE** was named president of the center's Foundation Board. She is the senior vice president for development and community relations. . . . **ANGELA BONTEMPO** has been appointed senior vice president and executive director of Roswell Park Cancer Institute. She was president and CEO of Sisters of Charity Hospital in Buffalo and St. Mary's Hospital in Troy.

In Cooperative Group System, Who Is Responsible To Feds?

(Continued from page 1)

Boeing responsible," Bruce Chabner, director of the NCI Div. of Cancer Treatment, said to a subcommittee of the National Cancer Advisory Board this week.

Members of the Subcommittee on Clinical Investigations said the proposal places too great a financial liability on the group headquarters institutions. No institution would be willing to take on the responsibility for the hundreds of investigators at hospitals and community practices who place patients on studies.

"I don't know that you need to go this far," said NCAB member Philip Schein, of U.S. Bioscience Inc. "This could have implications for accrual."

"Far Too Open-Ended"

Over the past six months, NCI staff and the group chairmen have been rewriting the requirements, or "terms of award," for the cooperative agreements that fund the group headquarters. The most recent outline includes eight terms of award.

The group chairmen attempted to draft a version of the requirement for recovery of funds, but declined to submit it to NCI, Ross McIntyre, chairman of the Cancer & Leukemia Group B and the leader of the cooperative group chairmen's committee, said to **The Cancer Letter**.

"NIH does not currently have this authority, and we felt it would not be right for the cooperative group chairs to set a precedent," McIntyre said. A policy change of this magnitude should go through a formal rulemaking process, he said.

"This is far too open-ended, and our institutions almost certainly won't agree to it," McIntyre said.

THE CANCER LETTER

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Subscription $225 per year North America, $250 elsewhere. ISSN 0096-3917. Published 48 times a year by The Cancer Letter Inc., also publisher of The Clinical Cancer Letter.

Were the institutions to agree, they would want the groups to write indemnification clauses into subcontracts with other institutions so that the third party would be responsible for repayment in the event of misconduct, he said.

However, some state laws prohibit the binding of state institutions by indemnification clauses, McIntyre said. If state institutions cannot participate in clinical trials, entire cooperative groups will fall apart, he said.

Thus, Chabner's parallel to private industry subcontracting is not a valid example, McIntyre said. "Our subcontracts are let to state institutions as well as other nonprofits, and therefore the subcontracts we issue are subject to state laws that would not be applicable in the situation of Boeing dealing with a subcontractor," he said. "Those facts were simply not appreciated" by NCI.

Buy Insurance To Cover Risk?

The NCI proposed rules give the Institute the authority to recover funds from the institutions where the groups are based under the following circumstances:

- If research is rendered invalid due to actions by the awardee or a third party with which the awardee has a legal or financial relationship.
- If conditions of the award are not adhered to by the awardee.

At this time, NCI has no right of recovery directly against a subgrantee, and the proposed rule would not provide that authority, Robert Lanman, NIH legal advisor, said to the NCAB subcommittee.

NCI officials have said they plan to seek recovery of funds from St. Luc Hospital in Montreal, where Roger Poisson was found to have committed scientific misconduct in entering patients on National Surgical Adjuvant Breast & Bowel Project trials. The hospital had a direct legal relationship—a cooperative agreement—with NCI, said Richard Ungerleider, chief of the Clinical Investigations Branch in the Cancer Therapy Evaluation Program.

Lanman suggested that the cooperative groups could purchase insurance to cover the risk of misconduct by third parties, and charge the cost of the insurance to their grants.

McIntyre, in an interview with **The Cancer Letter**, said he doubted that insurers would extend such protection, and even if they did, NCI's budget for the cooperative groups could not cover the costs. "Every dollar that is used to pay for such a premium

is a dollar taken out of research," he said. "In my view, it is an indication of this dreadful state of affairs in our scientific organization.

"The research we are doing for the government costs about twice the amount of funds we receive from NCI," McIntyre said. "We already are donating tremendous resources on behalf of these projects.

"NCI is trying to look responsible to Congress in an area where there are a lot of rules, regulations and state laws that create a matrix into which most parties have little room to maneuver, even though their intentions may be pure," he said.

Clinical investigators "by and large they have done a very good job, and if they are treated appropriately they will continue to do good job," McIntyre said.

"None Of Us Are Happy"

At the subcommittee meeting, NCI officials said they were not entirely comfortable with the proposed requirement.

Over the past 23 years, NCI has widened participation in clinical trials to thousands of institutions around the country, including small community hospitals and physician practices. The proposed requirement "would make it impossible to establish the tertiary network of trials we have now," Chabner said.

"None of us are completely happy with this," CTEP Director Michael Friedman said. "What we want is an ability to get back funds spent irresponsibly, for example, if audits are not done. I am concerned that it is going to change the way we conduct trials."

Leaving out the small institutions and practices that accrue only a few patients may be the only solution. "We could do almost as good a job by sticking to the largest accruers," Friedman said.

Leslie Ford, chief of the Community Oncology & Rehabilitation Branch, said, "Let's not make the assumption that fraud only occurs at small institutions."

St. Luc Hospital was a significant accruer to some NSABP trials. In the B-06 lumpectomy study and the B-18 trial, St. Luc patients represented 16 percent of the total accrual, according to the Office of Research Integrity final report on the Poisson inquiry (**The Cancer Letter**, March 18).

Subcommittee Chairman Paul Calabresi suggested that lawyers and insurers from cooperative group institutions meet with NIH legal counsel to resolve the dispute.

"It is a legal issue, not a medical issue, and we as scientists and physicians are ill-equipped to resolve this," Calabresi said to The Cancer Letter. "The reasonable thing is to have a panel of lawyers negotiate with NIH and come out with an acceptable risk situation. We want to ensure that the group program is viable and effective."

Proposed Terms of Award

A summary of the eight proposed terms of award follows:

1. Quality assurance of data. The awardee is responsible for:

—prevention and identification of scientific misconduct and other data irregularities.

—auditing accuracy of submitted data

—the terms of award outline the responsibilities following the initial discovery of data irregularities, including when and whom to notify at NCI.

2. Procedures in the event of scientific misconduct:

—notification of Data and Safety Monitoring Board, collaborators, sponsors, IRBs

—reanalysis of results deleting erroneous data.

—data files must be available to NCI upon request.

3. Data files must be available upon request if the results of a study are likely to have a major impact on patterns of care.

4. On-site auditing must be done at all sites, and the results provided to NCI. Accrual at the site will be suspended if the awardee is non-compliant.

5. Data and Safety Monitoring Board must be established for phase III clinical trials, and must comply with NCI policies and procedures.

6. Adverse event procedures include the education of participants regarding procedures and notification of NCI and other sponsors.

7. Recovery of funds by NCI:

—if research rendered invalid due to actions by awardee or third party

—if conditions of award not adhered to by awardee

8. Notification of patients by the awardee during patients' lifetime:

—in the event of scientific misconduct or other findings affecting integrity of data or patient safety

—in the event that NCI determines that a significant adverse event is associated with protocol-directed treatment.

NIH May Claim BRCA1 Rights; Company Files For Patent

NIH is laying the groundwork for claiming intellectual property rights to the recently isolated BRCA1 gene, sources said.

The dispute between NIH and the private company that has applied for a patent for the gene is likely to center around the contribution made to the discovery by researchers at the National Institute of Environmental Health Sciences.

"Our technology transfer lawyers will be consulting with their counterparts at the Univ. of Utah about the inventorship issue with regard to BRCA1," Anne Thomas, NIH associate director for communications, said to **The Cancer Letter**.

Meanwhile, Myriad Genetics Inc. has filed a patent application claiming the rights to the gene. "Patents have been filed on the BRCA1 gene, and the inventors listed are from the Univ. of Utah and Myriad Genetics," Peter Meldrum, president of the Salt Lake City, UT, company said to **The Cancer Letter**.

Two NIEHS researchers, Roger Wiseman and Andrew Futreal, were allowed to collaborate with geneticist Mark Skolnick, of Myriad and the Univ. of Utah, who led a team searching for the gene, sources said. They were listed as coauthors on papers published in Science describing the gene.

According to Meldrum and NIH sources, no agreement addressing the issue of intellectual rights existed between NIEHS and either Myriad or Skolnick.

"There was no written agreement," Meldrum said in an interview.

Sources said Wiseman and Futreal became interested in taking part in the search for BRCA1, secured authorization to collaborate with the Skolnick team, then proceeded with their work.

"That's how science should be done," an official familiar with the situation said to **The Cancer Letter**.

However, it appears that there was one oversight, the official said. "Nobody ever gave a thought to what would happen if they ever found this thing."

NSABP Roundup: Fisher, Pitt Negotiating; Candidate No. 9

After three weeks of on-again, off-again negotiations, Bernard Fisher and the Univ. of Pittsburgh remain to arrive at an agreement in an action brought by Fisher against the university.

Last week, U.S. District Judge Donald Ziegler urged the parties to work out a settlement. The judge ordered the parties to inform him periodically on the progress of the negotiations.

Should Ziegler find that the two sides are hopelessly deadlocked, he would be expected to begin a hearing on the plaintiff's motion for an injunction seeking Fisher's immediate reinstatement as chairman of NSABP as well as removal of the cooperative group's interim leadership.

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The latest candidate for chairman of the National Surgical Adjuvant Breast & Bowel Project is Richard Simmons, chairman of the Univ. of Pittsburgh Medical Center's department of surgery.

Simmons, a transplant surgeon, is the ninth candidate for chairman of the cooperative group.

A search committee of the NSABP executive committee was expected to finish interviewing candidates later this week (**The Cancer Letter**, Sept. 9). The executive committee is expected to put forward a candidate on Oct. 14.

The Univ. of Pittsburgh has said earlier that it would not put forward its candidate for chairman to the NSABP executive committee, which has joined Fisher as a plaintiff in his suit against Pitt. Simmons did not return calls from a reporter.

Report Urges Coordination Of National Cancer Program

Americans are not reaping the full benefit of the nation's $23 billion-and-counting investment in cancer research due to an absence of coordination among federal agencies, lack of access to quality health care, and serious funding gaps in basic and translational research, an advisory committee said in a report last week.

"We are not taking full advantage of opportunities for prevention," Paul Calabresi, of Brown Univ. School of Medicine and chairman of the subcommittee, said. "The advances we have made in prevention, diagnosis, treatment and rehabilitation are not available equally to all of the people."

In the 23 years since the National Cancer Act of 1971 was signed, Congress has increased funding for cancer research and significant gains have been made, the Subcommittee to Evaluate the National Cancer Program said.

Half of all cancer patients can expect to live for five years or more, the quality of life for those undergoing cancer treatment and for cancer survivors has improved, and scientific investigation of cancer

has spawned a revolution in molecular biology and created the biotechnology industry, the report said.

But the disease that kills one American per minute each year will not be conquered by the National Cancer Institute's research alone, the subcommittee said in its report, "Cancer at the Crossroads: A Report to Congress for the Nation."

"Just as you couldn't win the Gulf War from the Pentagon, we're not going to win this war from Bethesda," Harold Freeman, chairman of the President's Cancer Panel and a subcommittee member said in a press conference last week.

The report was written at the request of Congressional appropriations committees which asked NCI last year to study the progress made since the National Cancer Act and to develop a plan to carry into the next century.

Cancer Program's Broad Scope

The federal government, Congress and the public have wrongly assumed that NCI is the only agency responsible for fighting cancer, the report said. However, NCI's research and educational programs are only a small part of what should be a nationwide effort.

The National Cancer Act originally gave NCI the responsibility for planning and developing an intensified and coordinated cancer research program encompassing other NIH research institutes and other federal and non-federal programs.

Several years later, the responsibility for other federal and non-federal programs was removed from the authorities of the NCI director.

"This subcommittee believes strongly that the original legislation characterized correctly the broad scope of [National Cancer Program] research-related activities," the report said. "It is the subcommittee's view that the NCP extends beyond research to its application to the people and includes all nonresearch, nongovernmental and community constituents whose actions impact the cancer problem.

"Better coordination among all public, private and voluntary agencies with cancer-related activities are critical if we are to reduce the burden of cancer," the report said.

Although the report did not develop a complete economic analysis of cancer program funding, the subcommittee identified funding needs in basic and translational research. The report called for:

- An additional $60 million per year to support translational investigation.
- An additional $180 million in FY 1995 to raise the total funding for investigator-initiated grants to $890 million. This figure should be increased to achieve a 3 percent real annual growth through FY 2000.
- Unspecified increases in funding for all other federal institutions engaged in cancer-related research.

The report will be mailed to every member of Congress.

A Plan, Not A "Cancer Czar"

Key to the better coordination of federal and non-federal efforts against cancer would be a plan led by the White House with Cabinet representation, the report said.

However, subcommittee members said they were not seeking the establishment of a "cancer czar" similar to the White House Office of the National AIDS Policy Coordinator. That office has been criticized for lack of effectiveness.

"News reports have said we called for an AIDS czar [for cancer], but that is not true," said Ellen Stovall, executive director of the National Coalition for Cancer Survivorship and a subcommittee member said to the National Cancer Advisory Board this week. "Our goal is to raise cancer to the level of importance that it deserves."

Exactly how this should be done requires further study, Calabresi said. One idea expressed by some subcommittee members was the development of a plan similar to the National Action Plan on Breast Cancer coordinated by HHS and breast cancer advocacy groups.

The NCAB this week established a subcommittee to work in implementation of the report. Calabresi will chair the committee, whose members are Freeman, Stovall and NCAB members Ellen Sigal and Deborah Mayer.

Specific recommendations contained in the report follow:

"Overarching Recommendations"

—Establish a Presidentially-led plan for overall coordination of the National Cancer Program that includes appropriate Cabinet-level representation, criteria for broad participation in Program planning and activities and restablishment of the 1971 legislative authority for national coordination of NCP cancer-related research activities of government, industry and voluntary sectors.

—Perform a detailed evaluation of cancer

research programs and priorities, including questions of value, purpose, function, and duplication under the direction of the NCI director with representation from other federal research agencies. The portion of the National Cancer Program review encompassing the intramural program should take into account the recent NIH evaluation, Report of the External Advisory Committee of the Director's Advisory Committee, NIH on the intramural research program.

—Provide sufficient funding to maintain a balanced portfolio of basic, translational and applied research. Eliminate excessive earmarking and redirection of funds. Priority: Initiate (i.e., start major new effort in one to two years).

—Expand the number and broaden the scope of NCI-designated cancer centers and community-based oncology programs to enhance their capacity to conduct research, expand outreach activities and research dissemination, and improve their geographic and demographic distribution nationwide.

Application of Research

—Include as part of the core benefit package under any health care reform plan, universal access to state-of-the-art cancer care that includes preventive, diagnostic, treatment and rehabilitative/support services, and access to qualified clinical trials. Managed care plans must allow subscribers access to the expertise available at NCI-designated cancer centers.

—Increase the use of established early detection and diagnostic tools and programs, e.g., Pap smears for cervical cancer, and screening mammography for breast cancer.

—Apply current knowledge about cancer prevention and care to culturally and economically diverse populations, including the poor, elderly, rural populations, cancer survivors, ethnic and racial minorities, and low literacy populations. Improve methods of communicating cancer prevention and control information to these groups and the general public.

—Change tobacco-related policies, apply current knowledge on tobacco interventions to prevent children and young adults from starting to smoke, and decrease tobacco use among current smokers. Priority: Immediate. Specifically:

1. Create an environment that makes it undesirable to use tobacco.

2. Enforce existing laws and enact new legislation and regulations to make tobacco products unavailable to minors.

3. Increase tobacco product taxes to reduce demand.

4. Provide subsidies or other financial incentives for tobacco education for children and other high-risk groups.

5. Eliminate tobacco subsidies to reduce the tobacco supply.

6. Eliminate tobacco company tax deductions for tobacco product advertising.

7. Withdraw federal funding from cancer research organizations that accept tobacco industry support.

8. Reduce secondhand smoke exposure by prohibiting smoking in all public buildings.

9. Prohibit tobacco exports to prevent broader exposure to known carcinogens.

—Examine and change laws and regulatory policies and practices, including those related to the environment and food supply, that contribute to the cancer problem and frustrate cancer prevention and control efforts.

—Strengthen support for evaluation, implementation, and access to new cancer care technologies and therapies.

—Improve the cancer care delivery system and strengthen the cancer centers program. Specifically:

1. Develop standards and a review process for formally designating levels of care provided at NCI-sponsored, academic, and community cancer care facilities.

2. Establish and support NCI cancer centers in high-incidence and high-mortality cancer areas. The review process for such centers should place greater emphasis on cancer control activities and application of research findings. Revitalized and expanded Cancer Prevention Research Units may be an established mechanism through which such programs might be developed.

3. Facilitate cooperative efforts in which established NCI-designated cancer centers work with community hospitals and other facilities involved in cancer control, and/or design a new kind of center that focuses on cancer control as its primary mission.

—Provide support for clinical trials of new treatments. This includes support from health care payers for outpatient and inpatient clinical care costs incurred in the conduct of clinical trials, outcomes research, and quality of life studies.

—Develop and conduct clinical research to identify differences in culture and biology in minority and underserved populations that may affect success

in cancer prevention, detection, treatment, supportive and terminal care.

—Modify, coordinate and expand existing data collection systems to improve the conduct of research; collect data on the efficacy of cancer control measures in diverse populations.

—Increase attention to cancer prevention, detection diagnosis, treatment, supportive care, and survivorship issues in basic medical and other health professional curricula. Emphasize cancer topics in continuing education for practicing health care providers.

—Provide educational support or loan forgiveness to develop or support cancer care providers, with emphasis on underrepresented minority health care providers, who will practice in designated underserved areas and areas with disproportionately high cancer incidence, suffering and mortality.

—Continue support and expansion of public cancer information systems (e.g., Cancer Information Service), making special efforts to reach rural, culturally diverse, and other health care providers among whom these systems currently may be underutilized.

Translation of Research:

—Conduct research on internal (endogenous) factors influencing cancer development:

1. Conduct studies to identify hereditary and genetic abnormalities associated with cancer development, and investigate the role of carcinogen metabolism in cancer susceptibility. Target screening and prevention programs to individuals with the highest risk of developing cancer.

2. Establish the role of hormones in the etiology and prevention of certain cancers.

—Develop effective strategies and methodologies for encouraging individuals to avoid behavior that increases cancer risk and to adopt health-promoting practices.

—Develop technologies to improve cancer detection and treatment.

1. Further develop and define the appropriate utilization of less invasive and more precise diagnostic procedures. These range from imaging devices and blood tests for early detection of cancers, to biochemical and molecular characterization of the cancer tissue to predict tumor behavior.

2. Further develop and define the appropriate utilization of new treatment-related tumor imaging, radiation therapy and minimally invasive surgical procedures and technology. Examples include laser therapy, cryotherapy, thermal therapy, computer-assisted radiation therapy and particle therapy.

3. Analyze cost-effectiveness of new and/or expensive technologies prior to widespread implementation.

—Develop agents for cancer prevention and treatment.

1. Support chemoprevention studies, including the identification of novel uses of chemopreventive agents, through basic and epidemiological investigations.

2. Develop novel strategies such as cancer vaccines to prevent the development of cancer and to treat cancer recurrence and metastasis.

3. Conduct preclinical developmental research on novel therapies such as chemotherapeutic agents, radiation modifiers, biotherapy, gene therapy and immunotherapy.

—Develop methodologies and technologies to better predict and improve cancer patient outcomes.

1. Develop surrogate or intermediate endpoints to predict incidence and mortality and speed the development of new preventive and therapeutic approaches by reducing the length of clinical trials.

2. Further develop and define appropriate utilization of predictive and prognostic indicators, e.g., tumor markers and clinical characteristics that might alter therapeutic strategies.

3. Pursue research to identify the reasons for different outcomes among patients who receive the same treatment. Such knowledge will lead to more effective prevention and control measures and to novel treatments.

4. Further develop and define the appropriate utilization of measures that eliminate or reduce acute and late treatment toxicity. Developing strategies to reduce acute toxicity (infection, hair loss), prevent long term complications (organ dysfunction, secondary malignancy) and increase treatment efficacy requires the use of appropriate animal models.

—Improve grant administration and peer review processes to strengthen support for translational research.

1. Using the peer review process, phase into the cancer centers program an additional $60 million per year (an average of approximately $1 million per NCI-approved comprehensive and clinical cancer center) to support translational investigation.

2. Modify the peer review system for translational research grants to ensure fair review and provide a reasonable probability for success for an individual who wishes to pursue a translational research career.

3. Establish an NIH Clinical Research Initial Review Group. Revise the composition of existing IRGs to enable translational research to compete on equal footing with basic science research.

—Encourage research and development firms to enter into cooperative agreements with the federal government to conduct cancer research. Create a mechanism to examine and refine laws and regulations for drug and device approval. Current laws and regulatory practices inhibit adequate return on investment in cancer research for people with cancer, academic centers, industry, and investors.

—Streamline the FDA approval process for phase I and early phase II studies. Alternative review processes should be more efficient, yet remain as safe as they are now.

—Provide support for clinical trials of new treatments, screening and diagnostic approaches. This includes support from health care payers for outpatient and inpatient clinical care costs incurred in the context of phase I and II trials.

—Support activities to evaluate scientifically the possible efficacy of complementary (also known as unconventional or alternative) therapies.

Basic Research:

—Increase the pool of funds for investigator-initiated grants. R01, R29, R37, and P01 grants provide the most appropriate and efficient mechanisms for providing support for investigator-initiated research. At least $890 million should be available in FY 1995 for investigator-initiated grants, with 3 percent real annual growth (adjusted for inflation using the Biomedical Research and Development Price Index) through FY 2000. Increases in funding are also necessary for all other federal institutions engaged in cancer-related research.

—Preserve the infrastructure that supports academic research. A stable pool of funds is required to support research and education of basic and clinical researchers. Enable new construction, renovation and conversion of outdated research facilities.

—Restructure the grant administration process.

1. Revise the application process to reduce time spent in writing and reviewing grant applications.

2. Increase the funding period of individual research grants.

3. Decrease the time between application and funding (currently 9-12 months).

4. Explore mechanisms for quickly identifying the most meritorious grant applications while still providing young scientists sufficient feedback to enable them to improve their unsuccessful grant submissions.

—Develop a full understanding of the molecular and cellular basis for cancer development and progression.

1. Continue development of technologies and tools, such as human genome mapping, x-ray crystallography, nuclear magnetic resonance analysis, and three-dimensional protein modeling using super computers, that support this critically important research.

2. Improve understanding of genetic instability and differences among cancer cells (variations in drug resistance and tendency to metastasize) and how these factors contribute to disease progression and cancer treatment failure.

—Conduct epidemiologic and laboratory investigations to determine the causes of cancer, including the interactions between hereditary, environmental (including lifestyle and occupational), dietary, infectious and hormonal risk factors.

—Expand knowledge of cell cycle control, tumor biology and host-tumor interactions and how they affect responses to treatment.

—Expand basic knowledge of tumor virology/microbiology, including isolation and characterization of existing and/or new microorganisms associated with cancer initiation, and of mechanisms by which these microorganisms contribute to tumor formation.

—Encourage collaboration between basic scientists and translational and clinical researchers to accelerate cancer prevention, detection and treatment technology development.

—Speed scientific progress and foster creativity by facilitating scientific interaction and collaboration through novel use of information technology and shared instrumentation and resources.

NCI Contract Awards

Title: Continued operation and technical support of the NCI Frederick Cancer Research and Development Center

Contractor: Program Resources Inc., $49,393,072.

Title: Computer and statistical support, NCI FCRDC

Contractor: Data Management Services Inc., $13,632,5000.