THE CANCER LETTER

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"PROJECTS FOR SPECIAL DONORS" – ACS CONSIDERING WAY TO RAISE VAST NEW SUMS FOR CANCER PROGRAM

The American Cancer Society is considering a new fund raising approach which, if it succeeds only half as well as its chief sponsor–Frank Rauscher–feels is possible, would move ACS far ahead of NCI as the biggest supporter of cancer research and control in the country and the world.

The new money that would be generated by the plan would permit ACS to restore the momentum in the National Cancer Program now being lost because of the federal government's determination to hold

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In Brief

NCI TO FILE HEROIN IND FOR PAIN CONTROL; SEN. CRANSTON TO KEYNOTE MEETING ON CENTERS

NCI WILL FILE an IND for heroin use in pain control for cancer patients. Brian Lewis, special assistant for clinical affairs to Div. of Cancer Treatment Director Vincent DeVita, told the DCT Board of Scientific Counselors that "there is no definitive data heroin is better than other analgesics." NCI studies will attempt to determine if there are any significant differences between heroin, morphine and methadone. NCI will crossfile on existing INDs; Sloan-Kettering already has a study under way. Presidential health aide Peter Bourne has promised to remove any roadblocks to the studies. . . . **FOUR OF WORLD'S** leading figures in treatment of breast cancer will participate in a symposium on breast cancer management sponsored by the American Cancer Society Virginia Div. April 6. They are Philip Strax, medical director of the Guttman Breast Diagnostic Institute; Bernard Fischer, director of oncology at the Univ. of Pittsburgh School of Medicine and chairman of the National Surgical Adjuvant Project for Breast & Bowel Cancers; Samuel Hellman, chairman of the Dept. of Radiation Therapy at Harvard and director of the Joint Center for Radiation Therapy; and Gianni Bonadonna, director of the Div. of Medical Oncology at the Istituto Nazionale Tumori, Milan. Contact ACS, Fairfax County Unit, 346 Maple Ave. East, Vienna, Va. 22180. The symposium will be at Fairfax Hospital. . . . **SEN. ALAN CRANSTON** (D.-Calif.) will be the keynote speaker at the second of two conferences on the governance and structure of cancer centers sponsored by the American Assn. of Cancers Institutes and NCI, in Los Angeles May 1-2. . . . **COLLECTED PAPERS** from the1977 symposium on treatment of non-Hodgkin's lymphomas, sponsored by NCI and the Cancer Clinical Investigation Review Committee, are available free from Stephen Jones at the Univ. of Arizona. The papers were published in *Cancer Treatment Reports,* and Jones, a CCIRC member, has extra copies of that issue. Contact him at the UA Health Sciences Center, Dept. of Internal Medicine, Tucson 85724, phone (602) 882-6372.

ACS DEVELOPING SHOPPING LIST OF NEW PROJECTS FUNDED BY SPECIAL DONORS

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the line on cancer research spending. In addition to a variety of new projects, ACS also would supplement funding of cancer centers and other programs being hurt by NCI cutbacks.

The approach would have ACS establish "Programs and Projects in Cancer Research for Special Donors," as Rauscher, ACS senior vice president for research, described it in a memo to Arthur Holleb, senior vice president for medical affairs.

The primary ACS fund raising effort now is a nationwide drive every April, with volunteers doing the leg work. This produces most of the society's annual operating money, $144.5 million in 1977.

The new approach would retain that annual effort but would develop a "shopping list" of programs and projects which need funding and then go after the money to fund them. Industry, organized labor, private foundations, any number of private interest groups and individuals would be offered the opportunity to help support the projects or programs of their choice.

Other ACS staff executives and staff members are enthusiastic about the possibilities of the special donor approach. They are working on plans for implementing at least some of Rauscher's suggestions and adding ideas of their own.

Here are some of the projects which are being considered (not in any order of priority), with some of Rauscher's estimates of funding requirements:

1. High priority projects already approved by peer review but for which no funds are available.

"About $30 million could be used well," Rauscher said. NCI was able to fund only about 35% of its approved traditional research grant applications in FY 1977, and ACS about 17% of those it approved. ACS, of course, could pay more of its own if more money is available. It could pick up and fund the NCI unfunded grants provided those grantees had also applied to ACS, a practice ACS encourages.

2. ACS research centers for cause and prevention.

Rauscher said that five to 10 centers ought to be funded at $250,000 each for five years.

3. Special institutional core grants.

"NCI seems to be pulling out of this type of support, not for lack of importance but because of much pressure to do all it can to support R01 (traditional) type grants," Rauscher said in his memo. He suggested up to 30 such grants for five years, from $100,000 to $300,000 each.

"Some of the most important funds to have and yet among the most difficult to get are those that allow the director of a center or institution some discretion to support and encourage interdepartmental cooperation—the bright one-shot idea, the young investigator, common or shared facilities, visiting investigator and seminar programs."

Cancer center executives, feeling severely the crunch of the shrinking NCI support for centers, undoubtedly would welcome an infusion of ACS funds. Centers support might be particularly attractive to industry.

4. ACS chairs in community oncology.

Support to one to 10 institutions for a 10-year salary commitment to a senior investigator. Each chair would require an endowment of $750,000 to $1 million, Rauscher estimated.

5. ACS conferences, state of the art meetings and workshops.

"On virtually any subject of special interest to the society and the donor." It could support from 10-20 people for a workshop on hyperthermia to thousands for a conference on smoking and health. Each could require from $30,000 to $200,000.

6. Special international fellowships and research projects.

These fellowships would provide travel, salary and operational costs for the exchange of senior investigators. "This kind of fellowship is not available from any agency including ACS, NCI, UICC, CICA," Rauscher said. It also would support special research projects which can be done more quickly or better abroad but which would benefit the control of cancer in Americans, such as esophageal cancer in Iran, Rauscher added.

7. Community coordination grants.

An information and technology transfer program, to ensure that the best cancer treatment is available to patients in all hospitals of a community. Rauscher suggested up to 25 such grants at $50,000 to $300,000 each. "This could be attractive to donors who want funds to remain in a particular community. ACS would provide peer review and monitoring."

8. Operational awards for outstanding accomplishments in cancer research.

"Financial awards such as the Lasker, Nobel, DeVillier, Cleus, Karnofsky, Reimann, Rockefeller, AACR, Merck, Papanicolaou and many others are made to individuals for outstanding personal scientific accomplishment.

"Let ACS establish a series of annual awards of $25,000 each to individuals or organizations for continued activities (not a personal prize for personal use) in basic research, professional education, public information, clinical technology transfer, etc.," Rauscher's memo said. He suggested that several million dollars of endowment would be needed.

9. Awards for science management.

"Virtually all awards are made as prizes to individuals in recognition of personal research accomplishments. None, with the possible exception of the Rockefeller Public Service Award, honor outstanding direction, coordination, management. We have many superb scientifists in this country but we have very few who are willing and able to manage projects and

programs in cancer research. From time to time let us recognize individuals (possibly institutions) for outstanding management of cancer projects." He suggested a $5,000 award, funded by endowment. Would not be awarded annually but only when appropriate.

10. ACS matching or challenge grants for cancer.

"One of the most effective ways of using and extending money is to challenge people and groups to match it. As an example, since 1972 NCI provided more than $100 million for construction. It was matched by about $250 million from individuals, foundations and states.

"Let us seek an endowment pool of about $100 million (to start), the earnings of which would be available (peer reviewed) to individuals and groups able to match our investment for anything important in cancer research and control. This should be most appealing to industry."

11. Lobbying.

"We will be accused more and more of not doing enough to inform Congress and indeed to persuade them of the wisdom of specific actions. Some knowledgeable people and institutions understand this and would be willing to contribute. This is tricky, because of earmarks, overexpectancy, overpromise, image of beholding and the like. But it can be handled. This must be ongoing and therefore should be funded via endowment to assure credibility and continuation."

12. Identification and assessment of risk factors.

"Why do some people get cancer while others do not? Much more needs to be done regarding extrinsic and genetic influences. Why do some survive while others die? There must be many unknown risk or predisposing factors that contribute to these phenomena. Let's find them." He suggested $100,000 each for five year projects a year.

13. Organ site research.

"Many prospective donors with personal or family experience with cancer would contribute to a project or program having to do with a specific organ site. Projects could be broad or specific including cause, prevention, early detection, therapy, public information, etc." Rauscher suggested that up to 50 new research or control projects could be undertaken for 30 organ site, each project to be supported with $50,000 to $250,000.

14. Cancer information and motivation of the public.

"We know today what causes 65-70% of our cancers. And yet the incidence of most cancers is increasing primarily because we are not using existing information. There is great need for more and for more effective programs to better inform the public and to change their behavioral patterns. We must also inform the public that many things and habits do not cause cancer."

In the most ambitious of his suggestions, Rauscher said this project could use "any funds, up to several billion dollars." He later told *The Cancer Letter* he feels that an effective antismoking educational effort probably would have to match or exceed the several hundred million dollars a year the tobacco industry spends on advertising. He does not feel raising that kind of money, from individuals, foundations, and other sources, is impossible.

15. Nutrition and cancer causation and survival.

"Some investigators (Wynder, Gori, et al.) believe that up to 40% of our cancers may be due to over or under nutrition or to contaminants in our diet. If true, this presents the single largest potential for improving cancer incidence in the American public. New nutrition studies must include:

"—What in our diet causes or predisposes to cancer?

"—Can nutrition be manipulated to prevent cancer?

"—Can restrictive nutrition be used to 'starve' some tumors as a form of therapy?

"—What is the best diet/nutrition for people undergoing chemotherapy, etc., for their cancers?

"Relatively inexpensive because of other federal, state and foundation programs in nutrition. Piggyback and new grants of $20,000 to $100,000 each.

16. Research and demonstration programs in early detection and diagnosis.

"Much more must and can be done to inform and motivate the public (and doctors) as to the critical importance of risk factors and therefore the Pap test, sputum and urine cytology, ACS warning signs, proctoscopes, mammograms, palpation, and the like. This in particular should be attractive to donors who wish to keep funds in their own communities." He suggested $100,000 per community per year, preferably by endowment so that it may continue for at least five years.

17. Rehabilitation.

"If many cancers are so tied to the aging process that they will not be easily or ever prevented then we must do much more research into the prevention of morbidity and death from cancer in addition to the prevention of cancer. This hypothesis may not be true but it is plausible and therefore deserving of more attention. Support is required for the development of new technology as well as for the dissemination of existing technology. Few centers/institutions in the U.S. do this well. So (we could use) 20 projects at $100,000 to $300,000 each. Some institutions in some countries do this better than we. Consider international programs."

18. 'Nontoxic' forms of systemic therapy.

"A most profound realization in all of cancer research is the understanding that more than 60% of cancer patients (except skin) have metastatic disease at first presentation to the primary care physician. For the most part cancer recurs not because the surgeon or radiotherapist did not do their jobs well,

but because the other foci or lumps grow out.

"Chemotherapy is the only 'effective' means of systemic treatment today. But people know that it can be very toxic; hair, gut nausea, immunosuppression and the like. There are leads and ideas that must and can be extended for the use of less toxic forms of systemic therapy including less toxic drugs, immunotherapy, nutritional starvation of tumors, hyperthermia, new energies of new particles (e.g. pi mesons), vaccines, and others." He suggested 50 projects at $100,000–$500,000 each per year.

19. Develop new technology to test potential environmental carcinogens.

"Testing new chemicals to determine whether they are likely to increase the risk of cancer in exposed human beings is both a very important and a very difficult problem. Methods presently available are extremely expensive and serious questions have been raised as to their scientific validity.

"If adequate funding were made available, we would undertake research to develop scientifically valid procedures by which a reasonably large number of new chemicals could be tested each year at a feasible cost."

20. Epidemiologic identification of cocarcinogens in human populations.

"There is good reason to suppose that a considerable proportion of all cancers occurring in human beings arise because of combinations of two or more factors rather than being due to a single factor. Groups of people with known occupational exposure to certain specific chemical and physical factors provide an excellent opportunity to investigate this matter.

"If funds were made available we would undertake a set of prospective epidemiological studies similar in design to our cancer prevention study except that most of the subjects would consist of people known to have occupational exposure. A control group would consist of people in occupations not involving exposure to any chemical or physical agent in the workplace.

"Cooperation of both industrial companies and labor unions would be required as well as cooperation from American Cancer Society divisions and units. A large part of the work would be carried out by volunteer researchers thus greatly reducing costs. However, considerable funding would be necessary over a period of at least 10 years."

Rauscher said he did not attempt to add up the additional funds his project suggestions would require. A tally by ***The Cancer Letter*** placed it between $250 million and $500 million a year, not counting the "several billions" for the public education and motivation program.

The big question, of course is: Will it work? Drawing up lists of project ideas along with potential donors is one thing; selling it and actually bringing in the money something else.

NCI INVESTIGATES CHARGES AGAINST OCC, FINDS MOST OF THEM NOT SUPPORTABLE

Allegations of mismanagement in NCI's Office of Cancer Communications have been investigated by the Div. of Management Survey & Review which found, for the most part, that the charges were not true.

James Schriver, who directed the investigation, reported to NCI Director Arthur Upton he found three areas of concern which required some attention. However, "Our inquiry into the allegations did not disclose any major deficiencies but rather a pattern of minor controversial situations."

The allegations were made in an unsigned letter sent to NCI executives and various news media. They included:

- Buffington-Mingo Inc., an NCI contractor, hosted a picnic for OCC employees after the firm was awarded a contract by NCI. Schriver said the picnic had served as a get acquainted meeting, with OCC staff and contractor employees discussing operations under the contract. "Food and beer were served picnic style and in modest amounts," Schriver said. "Notwithstanding the business purpose of the meeting, participation by federal employees in this type of affair seems ill advised, although the values received in food and drink may well have been within the allowances of the HEW Standards of Conduct."
- Biospherics Inc., another NCI contractor, entertained the OCC staff at the homes of Biospherics employees. "We found only one instance when members of the OCC staff attended a party held at the home of an employee of Biospherics," Shriver said. "The occasion was a going away party for the contracting officer of Biospherics. It was impracticable to determine if the party, which was a small affair, was paid for by Biospherics or by the host."
- Unethical relationships between NCI staff and another contractor, Porter-Novelli & Associates. "During the assignment we noted that John Campbell and Warren Dunn, then with the Communications Branch of the Div. of Cancer Control & Rehabilitation, were doing consulting work after business hours and using the offices of Porter-Novelli as a mail drop," Schriver said. "This situation came to the attention of NCI management about January 1976 whereupon the two employees, although continuing their outside consulting work, discontinued using Porter-Novelli's offices as a mail drop. Incidentally, we found no evidence that either employee had filed an outside work request as required by the HEW Standards of Conduct. Dunn and Campbell are no longer employed at NCI, having transferred to another government agency.

"The firm of Porter-Novelli & Associates has a contract with OCC for the period from Feb. 1, 1977 to Jan. 31, 1980, for $1,259,520. Under the terms of the contract Porter-Novelli is required to provide

OCC with program support services. These services cover a wide range of activities. We learned that representatives of the contractor have been attending the OCC large staff meetings. We question the advisability of this practice as, althoughwe were assured that only program-related matters are discussed, the appearance of favoritism is unavoidable."

Schriver recommended to Upton:

"To preclude a repetition of criticisms such as those appearing in the unsigned letter, we recommend that you take the following actions.

"1. Prohibit NCI employees from having any social contacts with contractors.

"2. Discontinue having employees of contractors attend OCC staff meetings, but hold specific meetings with contractors limited to the scope of their contracts.

"3. Review the HEW Standards of Conduct with OCC employees and make them aware of potential areas of violations. Emphasis should also be placed on avoiding situations that may not be in violation of the Standards of Conduct but by appearance are questionable as to their propriety."

Other charges, including alleged waste of travel funds and failure by OCC contractors to perform under the terms of their contracts, were found by Schriver to be insupportable and invalid.

NCI DENIES RUMOR DECISION MADE TO MOVE BIOASSAY PROGRAM TO NIEHS

Among the rumors circulating at NCI this week involving the institute's extensive reorganization were:

1. The Carcinogenesis Bioassay Program would be moved from NCI to the National Institute of Environmental Health Sciences, located in Triangle Park, N.C. NIEHS also would take over the National Center for Toxicology Research in Pine Bluff, Ark., now operated by the Food & Drug Administration. This would place responsibility for all mass toxicity testing of chemicals, including carcinogenesis, with one agency.

2. NIH Director Donald Fredrickson has been unhappy with the pace of the reorganization, feeling it has been going too fast, and has not been pleased with some of the changes being made.

The rumor mill has been so overworked that Director Arthur Upton assigned Robert Namovicz, chief of the Management Policy Branch, the job of responding to questions from NCI staff members about the reorganization and the rumors it is generating.

Namovicz had previously told *The Cancer Letter* (March 23) that transfer of the Bioassay Program out of NCI was one option being considered. He denied this week that a decision had been reached, insisting it was still "several weeks away."

As for Fredrickson's alleged unhappiness, Upton met with him last week, explained details of the reorganization, and received approval to proceed with it as fast as possible.

When Congress passed the Toxic Substances Act two years ago, which substantially broadened the authority of the government to require testing for all forms of toxicity of chemicals suspected of threatening public health, NCI executives have felt that the Bioassay Program might eventually be lodged elsewhere. Many at NCI would welcome the move, feeling that the institute should concentrate on carcinogenesis research and let someone else do the routine tests.

The fate of the Clearinghouse on Environmental Carcinogens will depend on whether or not the Bioassay Program is moved. The job of the Clearinghouse is to make recommendations to the Program and to evaluate the tests coming out of it. If the Program stays at NCI, the Clearinghouse probably would stay in business, perhaps with some modifications. If it goes elsewhere, the new agency would establish its own advisory group. Whether or not this would include seeking advice from non-government people on evaluating the threat to human health would be an issue for that agency to consider.

NIEHS, headed by David Rall, is one of the National Institutes of Health although it is located about 250 miles from the NIH campus in Bethesda. Moving the Bioassay Program there would confront the Program's staff members with the decision on moving to North Carolina. Some might not have a choice, while others could take different jobs in the Div. of Cancer Cause & Prevention, or possibly other NCI divisions or even in other government agencies.

DCT BOARD OKAYS LIMITED DEVELOPMENT OF NEUTRON THERAPY, CLINICAL TRIALS

The Div. of Cancer Treatment Board of Scientific Counselors has agreed to support a limited expansion of NCI's efforts to develop particle radiotherapy. Board members recommended that NCI support the purchase of two neutron machines and their use in clinical trials.

The Board's recommendation fell considerably under the proposal by the Committee for Radiation Oncology Studies which called for a commitment of $500 million over 10 years to develop neutron, proton and pion therapy systems and to fund clinical trials with them (*The Cancer Letter*, Dec. 2). That proposal was made to the National Cancer Advisory Board, which asked Director Arthur Upton to establish a committee to study the recommendations.

DCT Director Vincent DeVita told the DCT Board that Upton had assigned him the responsibility for planning the implementa tion of the program, working with an NCAB subcommittee. He asked for the Board's help in formulating the plan.

Francis Mahoney, who heads the Radiation Biology & Physics Program in the Div. of Cancer Research Resources & Centers, reviewed NCI's grant supported efforts in high LET research, now totaling

$12 million a year. Clinical trials are limited because the only machines available are those designed for physics research, with inadequate facilities for patients.

William Powers, radiologist and an NCAB member, made essentially the same presentation to the DCT Board that was made to the NCAB, with more details on the program's development and funding requirements.

DeVita pointed out that to fund the full program would require a special appropriation from Congress. "That means we would have to say this is our highest priority. Or we can stay within the existing budget and provide a more modest amount. One option would be to go slow across the board (neutron, proton, pi meson). Or we can select only a part of it."

"I have serious reservations about this," said Board member Donald Morton. "I'm not convinced the cost benefit of this is better than the best conventional radiotherapy. I would rather see the money put into combined approaches. Radiosensitizers and heat do much the same thing to cells they say fast neutrons do. I'm concerned about the increased cost of medical care."

"Don't be overwhelmed by the magnitude," Board member Samuel Hellman commented. "The question of local recurrence is important. We could easily justify $8 million for four neutron machines. The most expensive part of cancer care is failure."

Hellman suggested that "we go slow" on development of the proton and pi meson technology, "and see how the neutrons work. If neutrons work, then we definitely would want to go to pions."

Board member Enrico Mihich suggested that an approach to Congress jointly with other agencies, to spread the $450 million around as a "national priority" might be successful. But DeVita said that the Energy Research & Development Administration, which also supports some high LET research, has asked NCI to pick up that program. "Everyone wants someone else to pay for it," DeVita said.

Board member Henry Kaplan said, "I don't see any way to get a definitive answer unless we get an answer to the question, should it be done at all? The situation is like chemotherapy was several years ago. It took a leap on faith. I think we could select one or two of the major cancers, and select one or two institutions with access to large numbers of those patients."

Kaplan recommended that support be provided for two or three neutron facilities, along with one proton machine and one pion. But Board member Harris Busch argued that "there isn't the scientific base" to support that much work in high LET research.

"What I'm hearing is support for limited neutron trials," DeVita said. "I'm hearing less for protons and pions. Pions are the most attractive but we can't afford it now. We need some clinically dedicated neutron machines. The physics of pion is the best. You can shape the field, and dose delivery is better."

"If that is so, then someone should go to Mrs. Humphrey or Mrs. Lasker and ask for their help in getting more money," Busch said. "We should not dilute the present work of NCI."

"We are considering that," Powers said. "There is a strong scientific basis for this."

DeVita said he would develop a plan to present to the Board at its next meeting.

NEW CREG CELL KINETICS STUDY AXED; BOARD FEELS THEY SHOULD BE R01 GRANTS

The Div. of Cancer Treatment Board of Scientific Counselors refused to approve a new Cancer Research Emphasis Grant program for detailed kinetic studies on the effects of chemotherapeutic agents in human cancers and critical normal host tissues.

The program would have been a followup to the first DCT CREG program in which seven investigators were funded to study cell kinetics. Five of those will expire in June, 1979; another, Takao Hoshino, at the Univ. of California (San Francisco), was funded for two years but has successfully competed for a two year renewal through the traditional (R01) grant mechanism. The other, Portu Rao at the Univ. of Texas System Cancer Center, was funded for two years and did not apply for a renewal.

Stanley Shackney, DCT project officer for the program, presented the case for the new CREG program as a followup to the first, in which investigators confined their studies to in vivo and in vitro systems. But Board members were not sympathetic.

"This has to do with the relative use of CREGs and re-CREGging," Samuel Hellman commented. "If we use CREGs in the future, and I favor that, we ought to be careful to use them in high priority areas, where nothing is being done. There are 20 papers on cell kinetics coming up at a meeting. The questions here have been around for eight to 10 years. It seems to me this CREG has served its purpose. CREGs should be used for special purposes, for unique reasons. This is worth studying, but as a regular grant."

"My impression is that there probably is enough being done," said Board member Charles Heidelberger.

"I've heard that such studies don't help much in treating patients," said Board member Harris Busch. "They don't feel people think it is clinically useful."

"I agree with Sam," said Board member James Holland. "There is a broad base of clinicians who study kinetics in humans. It is not appropriate to tie them together with a CREG."

Shackney argued that although "there may be a lot of interest in clinical cell kinetics, I'm not aware of any who parallel the work we are proposing." But when Board Chairman John Ultmann asked if there

was a motion to approve the new CREGs, none was forthcoming.

The message from the Board was clear: The CREG mechanism is appropriate for investigations in areas where little or nothing is going on. Once the area is stimulated, CREG grantees should compete in the regular grant mechanism for continued support.

The studies proposed by Shackney could provide clinical investigators an opportunity for grant support, provided they can develop applications competitive in the R01 process. Here's how Shackney described the prospective studies:

"We are interested in detailed intensive studies on relatively small numbers of patients. Studies calling for multiple serial samples in individual patients will necessitate the judicious choice of patients whose tumors can be sampled repeatedly without undue danger or discomfort to the patient (e.g., patients with malignant effusions or ascites, multiple skin metastases, or extensive bone marrow involvement).

"It should be recognized that no one parameter is likely to be adequate to characterize the sequences of kinetic changes induced by drugs, and that multiparameter studies on each set of samples from a given patient will be necessary. While the announcement should not specify which and how many parameters to study in a given patient, it can indicate that the thoroughness of study of individual patients will be an important factor in determining the responsiveness of proposals to the announcement. Thus, for example, paired labeling index determinations at arbitrarily chosen intervals in relation to drug administration would not be considered responsive.

"The comparative kinetic responses of normal and cancer tissues are of primary importance, and when possible, both should be studied in the same patient. Separate studies on normal and cancer tissues would be acceptable, but studies of normal host tissues alone would not be.

"A patient receiving single agent therapy in a single dose every 3-4 weeks would be ideal for study. Although it is recognized that clinical management decisions often preclude 'clean' studies in man, every attempt should be made to perform studies in clinical settings where the data can be interpreted with minimal ambiguity.

"An important question that might be raised with regard to these studies is whether the benefit from information to be obtained from such studies is justified in relation to the potential hazards and degree of discomfort associated with multiple sampling, and perhaps the administration of tritiated thymidine systemically.

"Any potential hazards of multiple sample collection should be minimized by the judicious choice of patients with tumors that can be studied readily.

"It is clear from studies in experimental systems in the last few years that different drugs produce distinct kinetic perturbation patterns, and that these patterns have specific implications for optimal scheduling. It is also evident from the few detailed kinetic studies that are available in man that:

"1. There are many qualitative similarities in the perturbation kinetics in man and in experimental systems, but the respective time courses differ.

"2. There are some perturbation kinetics phenomena in man that have no precedence in the experimental models, and

"3. There is greater complexity in the kinetic sequences induced by drugs in man.

"Thus, from the outset, there is every indication that kinetic studies in man are likely to provide valuable information."

ADVISORY GROUP, OTHER CANCER MEETINGS FOR APRIL AND MAY

American Society of Clinical Oncology—April 2-4, Washington Hilton Hotel, 14th annual meeting.

Carcinogenesis Program Scientific Review Committee—April 3-4, NIH Bldg 31 Room 9, open 8:30–9 a.m. both days.

Workshop on Functional Properties of Tumors of T & B Lymphocytes—April 3-5, NIH Bldg 31 Room 6, 8:30 a.m.–5 p.m. each day, all open.

Developmental Therapeutics Committee—April 4, Blair Bldg Room 110, open 9–9:30 a.m.

American Assn. for Cancer Research—April 5-8, Washington Hilton Hotel, 69th annual meeting.

Oncology Nursing Society—April 5-7, Sheraton Park Hotel, Washington D.C., third annual meeting.

Committee on Cytology Automation—April 6-7, NIH Bldg 31 Room 8, open 8:30–9:30 a.m.

German Cancer Congress—April 6-7, Wiesbaden/Mainz.

Pediatric Oncology Symposium—April 7-8, Istanbul.

President's Cancer Panel—April 11, NIH Bldg 31 Room 7, 9:30 a.m., open.

4th European Immunology Meeting—April 12-14, Budapest.

Seminar on Tumors Involving the Skin—April 12, Roswell Park continuing education in oncology. Contact Claudia Lee.

Designs for Clinical Cancer Research—April 13-15, Monteleone Hotel, New Orleans, sponsored by the NCI Cancer Clinical Investigation Review Committee, open.

International Symposium on CNS Complications of Malignant Disease—April 16-19, Southampton, UK.

2nd Congress on Nuclear Medicine—April 17-19, London.

Committee on Cancer Immunodiagnosis—April 18, NIH Bldg 10 Room 4B14, open 1–1:30 p.m.

Virus Cancer Program Scientific Review Committee—April 24-26, Landow Room C418, open April 24, 9–9:30 a.m.

Clearinghouse on Environmental Carcinogens Data Evaluation/Risk Assessment Subgroup—April 26, NIH Bldg 31 Room 6, 8:30 a.m.–5 p.m., open.

Committee on Cancer Immunotherapy—April 26-28, Landow Room C418, open April 26, 7:30 p.m.–8 p.m.

EORTC Symposium on Controversies in Cancer Treatment—April 26-29, Brussels.

American Radium Society Annual Meeting—April 26-30, New Orleans.

Clearinghouse Chemical Selection Subgroup—April 27, NIH Bldg 31 Room 6, 9 a.m.–5 p.m., open.

Cancer Control Community Activities Review Committee—April 27-29, NIH Bldg 31 Room 4, open April 27, 8:30 a.m.–5 p.m.

Clearinghouse Experimental Design Subgroup—April 28, NIH Bldg 31 Room 6, 8:30 a.m.–5 p.m., open.

Hospice & The Community Cancer Program—April 28-29, Disneyworld, Fla., Assn. of Community Cancer Centers regional meeting.

Conference on Governance & Structure of Cancer Centers—May 1-2, Los Angeles, sponsored by American Assn. of Cancer Institutes and NCI. Contact Lewis Avera, LAC/USC Cancer Center, (213) 226-4003.

Developmental Therapeutics Committee—May 4, Blair Bldg Room 110, open 9–9:30 a.m.

President's Cancer Panel—May 9, NIH Bldg 31 Room 7, 9:30 a.m., open.

World Conference on Lung Cancer—May 10-13, Hilton Head Island, S.C., International Assn. for the Study of Lung Cancer. Contact IASLC, 1603 Oakdale St. Houston 77004.

The Blood Platelet in Transfusion Therapy—May 10-11, Pan American Health Organization, Washington D.C., American National Red Cross symposium.

Carcinogenesis Program Scientific Review Committee—May 11-12, NIH Bldg 31 Room 9, open 8:30–9 a.m.

Adolescent Oncology—May 11, Roswell Park continuing education in oncology.

Div. of Cancer Biology & Diagnosis Board of Scientific Counselors—May 12-13, NIH Bldg 31 Room 10, open May 12, 9 a.m.–5 p.m.

Cancer Research Manpower Review Committee—May 12, NIH Bldg 31 Room 7, open 9–9:30 a.m.

Clearinghouse on Environmental Carcinogens Plenary Session—May 15, NIH Bldg 31 Room 6, 8:30–11 a.m., open.

Committee on Cancer Immunobiology—May 15-17, Landow Room C418, open May 15, 7 p.m.–7:30 p.m.

National Cancer Advisory Board Subcommittee on Centers—May 16, NIH Bldg 31 Room 6, 9 a.m.–5 p.m., open.

Cancer Solutions Within Our Grasp—May 16, Marie Curie Memorial Foundation, London.

Committee on Immunotherapy—May 18-19, Landow Room C418, open May 18, 8:30–9 a.m.

Committee on Cancer Immunodiagnosis—May 21-23, Landow Room C418, open May 21, 7 p.m.–7:30 p.m.

Symposium on Environmental Carcinogenesis—May 21-23, Michigan State Univ. Cancer Center.

Combined Modality Committee—May 24, NIH Bldg 31 Room 9, open 8:30–9 a.m.

Breast Cancer Task Force—May 24-26, NIH Bldg 1 Wilson Hall, open May 24, 8:30 a.m.–adjournment.

International Symposium on Advanced Cancer Pain—May 24-27, Venice.

National Cancer Advisory Board—May 30-31, NIH Bldg 31 Room 6.

CONTRACT AWARDS

Title: FDA/NCI study of role of saccharin in bladder cancer in the Michigan area
Contractor: Michigan Cancer Foundation, $218,729.

Title: FDA/NCI study of role of saccharin in bladder cancer in the California area
Contractor: California Dept. of Health, $174,728.

Title: Study of host restriction of Friend leukemia virus, continuation
Contractor: Albert Einstein College of Medicine, $109,170.

Title: Special study of role of saccharin in bladder cancer of the general population
Contractor: Westat Inc., $269,046.

Title: FDA/NCI study of role of saccharin in bladder cancer in the Georgia area
Contractor: Emory Univ., $60,170.

Title: FDA/NCI study of role of saccharin in bladder cancer in the Utah area
Contractor: Univ. of Utah, $57,200.

Title: FDA/NCI study of role of saccharin in bladder cancer in the New Mexico area
Contractor: New Mexico Tumor Registry, $52,568.

Title: FDA/NCI study of role of saccharin in bladder cancer in the Iowa area
Contractor: Univ of Iowa Hospital & Clinic, $180,459.

Title: FDA/NCI study of role of saccharin in bladder cancer in the Louisiana area
Contractor: Louisiana State Univ., $69,679.

Title: Studies on spontaneous and virus induced neoplastic transformation, continuation
Contractor: Meloy Laboratories, $1,033,556.

Title: Animal holding facility to support intramural research on RNA viruses, continuation
Contractor: Flow Laboratories, $99,736.

Title: Studies on expression of the RNA tumor virus genome in malignant cells, continuation
Contractor: Duke Univ., $1,174,600.

Title: Etiologic studies of cancer in New Jersey, continuation
Contractor: New Jersey Dept. of Health, $198,924.

Title: Development of a cancer epidemiology program in Connecticut, continuation
Contractor: Yale Univ., $93,400.

Title: Studies of Mareks disease, continuation
Contractor: Life Sciences Inc., $45,631.

Title: Demonstration of tumor specific transplantation antigens in tumors with microcytotoxicity assay, continuation
Contractor: Fred Hutchinson Cancer Research Center, $136,050.

Title: Computer support effort for resources management, continuation
Contractor: EG&G/Mason Research Institute, $971,388.

Title: Studies of the molecular mechanism of carcinogenesis by oncogenic viruses, continuation
Contractor: Univ. of Illinois, $151,659.

The Cancer Letter —*Editor* JERRY D. BOYD

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