DRS 3/2

THE CANCER LETTER

Vol. 7 No. 9

Feb. 27, 1981

Subscription $125.00 per year

P.O. Box 2370 Reston, Virginia 22090 Telephone 703-620-4646

NIH BUDGET CUT AT $142 MILLION, NCI COULD GET SMALL INCREASE OVER 1981 TOTAL; SCHWEIKER BACKS NIH FUNDS

President Reagan's revision of the Carter Administration's 1982 fiscal year budget will trim $142 million from NIH, it was learned last week. Although the distribution of that cut among the institutes was not made available, ***The Cancer Letter*** learned that NCI's share may not be as damaging as once feared.

NCI, in fact, could end up with a small increase over the original 1981 budget of a little more than $1 billion. Details on the new budget proposals will be released March 10.

When the Reagan ax first started swinging, visions of a 10 percent

(Continued to page 2)

In Brief

NCI HOLDING UP REGIONAL COOPERATIVE GROUP RFA UNTIL DEPARTMENT APPROVES NEW MECHANISM

RFA FOR REGIONAL cooperative groups will be released as soon as NCI gets HHS approval to start using the cooperative agreement mechanism. Competition for the awards which will get three (maybe) groups started this year is expected to be fierce, with as many as 12 groups and perhaps more planning to submit applications. The new groups will be reviewed by the Clinical Cancer Investigation Review Committee, which reviews existing groups under the present grant mechanism. Existing groups will be converted to cooperative agreements eventually. CCIRC Chairman Joseph Simone told the committee this week that there will be no difference in review for cooperative agreements than for the present grants. NCI expects to receive HHS go ahead in March. . . . **R. LEE CLARK** Professorship has been established at the Univ. of Texas System Cancer Center with a $200,000 endowment from the Rogers Brothers Foundation. Clark, 74, is president emeritus of the center, which includes M.D. Anderson Hospital. He retired in 1978 after 32 years as director of the center and last November was named UT System Professor of Surgery & Oncology. . . . **LOUISE CONALLY STRONG** is the first recipient of the Sue and Radcliffe Killam Professorship at UT System Cancer Center. Strong is an associate professor of medical genetics, biology and pediatrics. . . . **HOWARD SKIPPER**, who retired Dec. 31 as president of Southern Research Institute and director of the cancer program, will see the Institute's newest laboratory named for him—the Howard E. Skipper Chemotherapy Laboratory—on March 4. NCI Director Vincent DeVita will be the main speaker at the ceremony. DeVita has said that Skipper provided "a conceptual basis for the chemotherapists of the world. His work serves as a model of what can happen when you link the clinic to the laboratory and link it effectively.

SCHWEIKER SAYS NO DECISION MADE YET ON RETAINING DEVITA, FREDRICKSON

(Continued from page 1)

across the board cut flashed through NIH budget offices, and there was some concern among Cancer Program advocates that this could be translated into an even higher percentage cut for NCI.

Following a press conference Tuesday morning during which the President appeared for a few minutes, HHS Secretary Richard Schweiker told reporters that he had "fought very hard" to maintain stability of biomedical research in his sessions with the Office of Management & Budget. "You will see that biomedical research took a much lower cut than most other programs," Schweiker said.

Schweiker was asked if a decision had been reached on whether NIH Director Donald Fredrickson and NCI Director Vincent DeVita, both Presidential appointees, would keep their jobs. "That's farther down the road. We haven't reached that point yet," he said.

Reagan's remarks at the press conference, which included the White House press corps in addition to science and health writers, did not touch on health issues. He said that response to the program he outlined to Congress last week has been overwhelmingly in favor of it. "We have had 2,093 telegrams supporting us and 43 unfriendly ones," he said.

Reagan has withdrawn the $1.14 billion in rescissions from FY 1981 appropriations requested by Carter just before he left office, including $13.5 million for NCI. Reagan said he was converting the rescissions to deferrals, a temporary measure "to provide my Administration with the opportunity to review and revise these proposals within the context of my overall plan to curtail the growth of government and reduce federal spending."

The Cancer Program's first encounter with a Republican controlled Senate came last week when DeVita and Fredrickson appeared before the Health Appropriations Subcommittee chaired by Harrison Schmitt of New Mexico. Schmitt was conducting hearings on the NIH and NCI 1982 fiscal year budget.

Schmitt, 44, holds a PhD from Harvard and is the first scientist to head the subcommittee which holds the purse strings for the federal government's support of science. He is a geologist, was an astronaut on Apollo 17 and is the only member of Congress to have walked on the moon.

Schmitt's knowledge of and interest in science was impressive. He seemed particularly interested in disease prevention and in NIH's recent major cutbacks in supporting construction and upgrading of research facilities.

Schmitt and Arlen Specter, the new Republican from Pennsylvania, were the only senators to participate in the hearing. Excerpts from the dialogue between the senators and Fredrickson and DeVita follow (some of it paraphrased):

Schmitt: Is it significant that there is no organization at NIH which focuses on prevention?

Fredrickson: It is significant. But prevention is part of the structure of every one of our programs.

Schmitt: Isn't there political pressure pushing treatment?

Fredrickson: Yes.

Schmitt: How do you deal with it?

Fredrickson: By making hard choices based on the quality of science and hard priorities.

Schmitt: Wasn't the motive of Congress in creating each of the institutes based on treatment?

Fredrickson: A good deal of it was, but I feel that prevention also was included in congressional mandates.

Specter: What is the percentage of your budget spent on cancer research?

Fredrickson: NCI's budget is about $1 billion a year. An important point is that a large fraction of NCI's budget supports such endeavors as immunology, cell genetics, and other broad areas which enrich the flow of knowledge from all our institutes.

Specter: Is it possible to focus on a long range effort to prevent cancer?

Fredrickson: I believe within the decade we will know the fundamental cause of at least one form of cancer. Knowledge is moving so fast. It is easy to underestimate just how fast.

Specter: If cost were not a factor, how much money would you direct to NCI? Don't you think that doubling the budget of the Cancer Institute would significantly increase the rate of discovery?

Fredrickson: It would help but it wouldn't double the rate. I would not want to take money from the other institutes to achieve that.

Specter: Are there not others who feel otherwise?

Fredrickson: Yes. Some in the scientific community are concerned about the lack of growth in NCI's budget. They feel that lack is holding back progress. I don't agree.

Schmitt: Are we keeping up with the need for research facilities?

Fredrickson: No. We are not supporting much construction, except for a little supported by NCI.

Schmitt: To what extent should ~~be~~ emphasize support for modernizing and updating? Is research endangered by deteriorating facilities?

Fredrickson: I don't know. We are attempting to get a picture from universities of the state of their research plants. We need to know what are the most urgent needs.

Schmitt: In the space program, there was an explosion of facility development sponsored by NASA. The entire country benefitted. The benefit is incal-

culable to science and the country.

Fredrickson: To the extent that new buildings are required, we find that is not too important. Renovation of existing structures and acquisition of large pieces of equipment is important. Are we doing enough? I think we are, but we can't let the purchasing power of research resources decline in relation to other activities.

Schmitt: What funds are needed to maintain the number of research grants at 5,000?

Fredrickson: The cost of grants is going up. We need $582 million to pay 5,000 grants this year. That includes an estimate of 9.5 percent increase for inflation.

Schmitt: What is the basis of that figure?

Fredrickson: That is provided by OMB.

Schmitt: Do you believe it?

Fredrickson: Generally, yes, but not for certain costs.

Schmitt: Our projection in Congress is that inflation will be 12 percent.

Fredrickson: That may be the case for consumer products. But 70 percent of our costs are salaries, and they are not going up at that rate.

Schmitt: Is it necessary to maintain the number of grants at 5,000 to maintain the quality of biomedical research?

Fredrickson: We feel it is, but that must be evaluated in balancing needs. I wouldn't want to eliminate research resources to keep the number of grants at 5,000.

Schmitt: Is there any subdivision within those 5,000 grants aimed at prevention as opposed to treatment?

Fredrickson: Much of that is investigator initiated basic research. There is no way of knowing if it is prevention or treatment. The quality of science we are supporting is better than it ever was.

Schmitt: If you were faced with a major budget cutback, what would be your priorities? Would you maintain the balance you now have?

Fredrickson: Yes. We would do what we could to maintain the present balance.

Schmitt: I take it that in absolute funding, you are just about at the minimum level?

Fredrickson: We are at the maintenance level, and have had no growth since 1979. We can provide an excellent program at that level.

Schmitt: What is happening with indirect costs?

Fredrickson: They are slowly growing. In 1958, indirect costs averaged 19 percent. In 1980, they were 28.6 percent.

Schmitt: Was the increase due principally to labor costs?

Fredrickson: Probably not. It is probably due to increased energy costs. We are going to have to engage in very close analysis of cost sharing.

DeVita summarized the statement he submitted for the record (see below) and then responded to questions.

Schmitt: I understand that vitamin A research is under your personal supervision.

DeVita: Not directly, but I am quite interested in it. We have epidemiological data including sera samples comparing persons without cancer and those who later get cancer. Those with higher levels of vitamin A in the samples have lower incidences of cancer. There is interesting information which indicates that incidence of colon cancer decreases among those who move to the South from the North. We are seeing reduction in cancer mortality reflecting wide application of new tools we have developed, primarily chemotherapy. There is a revolution in basic biology. DNA sequencing has revolutionized the study of DNA.

Schmitt: Improvement of life expectancy in this country since the turn of the century has been mostly due to reduction in infant mortality. We've gained only six years in 81 years. Does that bother you?

DeVita: Some statisticians have estimated that if cancer were eliminated, it would raise life expectancy only two and a half years. But the average cancer patient loses 14 years of his life span. A child who gets cancer faces loss of his entire life. To answer your question, it doesn't bother me.

Schmitt: What are the cost savings produced by the Cancer Program?

DeVita: In childhood cancer alone, we are saving 2,000 lives a year more than we were in 1971. Assuming a normal lifespan and retirement at age 65 and averaging $10,000 a year each would earn, that is a return to the economy of $1.6 billion a year. In breast cancer, the cost of treating women whose cancers recur is $347 million a year. If those recurrences could be prevented, the cost of treatment would be only $57 million.

Schmitt: The Los Alamos meson facility has had remarkable success in treating prostatic cancer, 100 percent cures, but the cost is unacceptable.

DeVita: The best single treatment for some forms of prostatic cancer is radiotherapy, and pi meson radiation appears to bae the best. We had a group which looked at all particle radiation and the group suggested we start with neutron radiation first. We have invested in that. There are no other plans now for a pi meson facility. The cost would be very high. We are facing several alternatives in radiotherapy. Linear accelerators are in very wide use today, and they are effective. Particle therapy is under development, and we are studying radiosensitizers and radioprotectors. One theory is that radiosensitizers and radioprotectors used with linear accelerators might be as effective as particle therapy and a lot cheaper.

Schmitt: How much money would you need in

1982 to maintain your share of NIH's 5,000 grants?

DeVita: $10 million over the 1980 budget.

Schmitt: Is it important to stabilize new research grants regardless of other priorities?

DeVita: That should be our first priority, as long as we're dealing with halfway technology in treatment.

Schmitt: Is there any danger in the lack of investment in new research facilities?

DeVita: Yes. The National Cancer Advisory Board made a study of facility needs which estimated the amount of money needed.

Schmitt: What is the most exciting new technology in cancer research?

DeVita: There is a cluster of developments (citing enzyme studies, DNA sequencing, other aspects of cell genetics). It's the most extraordinary development in biomedical research in my lifetime.

Schmitt: What is the number of institutions which have the capability of working with monoclonal antibodies?

DeVita: There are a lot. (Fredrickson, when pressed by Schmitt for a number, said "scores.")

Fredrickson: The beautiful thing about monoclonal antibodies is that it is relatively cheap. There are many who can do it.

Schmitt: Is the program being held back by lack of facilities or lack of funds to use facilities they have?

Fredrickson: No, I don't believe it is.

DeVita: Another area that is a close second is the new anatomy made possible by high voltage electron microscopy. (There are two such facilities, and DeVita, responding to Schmitt's queries on their cost, said $3-4 million each.)

Schmitt: What difference would it make if there were 20 instead of two?

DeVita: I don't know.

Schmitt: You have no idea of the effect it would have if we could open up that area?

DeVita: I'm sure that a lot of exciting things would happen.

Schmitt: What I'm trying to get at, and I don't sense a real concern on your part, is the problem of a shortage of facilities.

DeVita: I agree with Dr. Fredrickson, that building new buildings is not our highest priority. There is a need for renovating existing facilities. Our highest priority is the support of research.

Schmitt: In the Feb. 13 issue of the Cancer Letter, you were quoted as saying that NCI could tolerate a 10 percent budget cut if the other institutes at NIH also were cut 10 percent. Would you like to explain?

DeVita: One should be careful about saying things like that. I said we could tolerate that if we had to, but only if we were treated equally with the rest of NIH.

Fredrickson: We need to be careful in making reductions that we don't do irreversible damage. If there is a major cut, a number of people will be disenfranchised. We don't know at what stage we could take a cut without doing major damages.

Schmitt: Is there any way Congress could legislate a shift from emphasis on treatment to prevention?

DeVita: It is not necessary. The shift has been made. Prevention has been our highest priority for the last four years.

Explanation: A rescission request submitted to Congress by the President requires congressional action within 45 days. It must be approved by both houses within that time; if it is not, it dies and the proposed cut is not made. A deferral submitted by the President means that the money will be withheld from the affected agency unless either house objects. Thus, the difference between a rescission and deferral is that Congress can kill the former by taking no action but must vote down (by at least one house) to kill the latter.

Congress did not seem eager to vote on Carter's rescissions and it seemed they would be denied. However, it does not seem likely that either house will get excited about Reagan's deferrals and they probably will stand. Goodbye, $13.5 million.

IMPROVED SURVIVAL, ADVANCES IN BASIC BIOLOGY NOTED BY DEVITA IN TESTIMONY

NCI Director Vincent DeVita described progress since 1971 and new opportunities for further progress in the National Cancer Program in his formal statement submitted to the Senate Health Appropriations Subcommittee. The statement:

I am honored to be here today to report our recent advances in cancer research.

Mr. Chairman, this year will mark the 10th anniversary of the National Cancer Act, and I am pleased to report to this committee that survival for cancer patients has increased. Data published last October by NCI show the five year survival rate has improved during the 1970s for seven of the 10 major forms of cancer in white Americans and six of the 10 major forms in blacks. At the same time we have seen the cancer mortality rate decrease for Americans under the age of 55, where cancer is the major cause of death from disease. This decrease reflects the remarkable gains in curing cancers that affect children and young adults. Mr. Chairman, the Institute's coordinated program of fundamental and applied research has played a large part in these encouraging trends.

Still, cancer remains a major killer entailing a tremendous financial and emotional burden. Our best estimates suggest that this year 420,000 people will die of cancer, and the disease will cost Americans approximately $30 billion.

Our program in cancer research has four main thrusts: (1) prevention, (2) detection and diagnosis, (3) treatment, and (4) basic biology. To illustrate how research results apply to common cancers, I will highlight gains made in each area for breast and colorectal cancers.

PREVENTION: In 1980 we completed our reorganization to strengthen the institute's prevention programs. We increased those programs' funding priorities and organized a new division, built around our cancer centers and control programs, to emphasize research in applied prevention. We now appreciate that cancer causation is often a two-stage process: The first stage—initiation—may not result in cancer if the second stage—promotion—is interrupted. As we learn more about promotion, we are impressed with the opportunities to interrupt the process and prevent cancer. For example, we have seen a rapid decrease in the incidence of uterine cancer with decreased use of replacement estrogens (a promotor) by postmenopausal women.

Epidemiology studies based on the U.S. maps of cancer mortality we published five years ago have given us a number of clues to environmental factors implicated in cancer. We learned that death rates from colon, rectal and breast cancers are about 50 percent lower in counties in the South compared to those in the Northeast and North-Central United States. Despite the large number of northerners who retire to Florida, this area retains the low rates of the South, even among older people. Could this lower rate be associated with a change in diet? Consumption of more fiber, vitamin A and C rich foods? The water? This finding may be related to other studies that show carcinogens in stools of colon cancer patients are reduced by the use of vitamins E and C. We hope further research will define strategies for preventing cancers of the breast, colon and rectum.

We have new information on how to prevent malignant melanoma, the dread cancer of the common mole. NCI epidemiologists in collaboration with Univ. of Pennsylvania pathologists have identified a certain type of inherited mole that is definitely a precursor of malignant melanoma. In its advanced stages this form of skin cancer does not respond to existing treatments. But when treated surgically at the earliest stages, melanoma is curable. The same type of mole now has been linked to the development of over one-third of all melanomas. We are beginning to teach physicians and people with melanoma in their families (who have a 100-fold increased risk of getting the disease) to recognize this particular tupe of mole and to watch for any subtle changes. This finding has the most important implications for prevention efforts and gives us a tool for early detection of some melanomas equivalent in importance to the Pap smear for detection of cervical cancer.

A major new initiative in applied prevention will begin this year with the development of a program on chemoprevention, the interruption of the cancer causation process with drugs or other agents. This area has developed rapidly, and we are evaluating now the cis-retinoic acids and vitamin C in man.

DETECTION AND DIAGNOSIS: Clinicians are beginning to use tumor markers—substances shed by cancer cells into the bloodstream—for screening and early detection of cancer. These materials are already used to track and stage diagnosed patients, to monitor patient response to therapy, and to predict recurrence.

In reference to colon cancer, experts reached consensus this year that the tumor marker CEA is of great help in following colon cancer patients and may be the best method to detect early recurrence. Yet even when a tumor marker such as CEA signals that something is awry, it does not tell clinicians where the cancer is growing. The ability to produce pure antibodies, made possible by fusing cells called hybridoma technology, has extraordinary promise in localizing small amounts of tumor.

In reference to breast cancer, NCI scientists have been able to make monoclonal antibodies to several antigens found uniquely on the surface of human breast cancer cells. They are now able to label the antibody with a special stain that can then be applied to tissue taken from a patient's tumor or lymph node that will aid in determining if it is malignant or benign. They have also linked purified antibody to radioactive iodine and are now conducting studies to determine the value of these specific probes in scanning the body for metastatic sites of breast cancer.

TREATMENT: Our emphasis in treatment has been on the use of several different types of therapy together soon after diagnosis. We call this approach combined modality therapy. The institute has a major responsibility for refining and developing new tools for combined modality therapy. These include second generation or less toxic anticancer drugs; biologics like interferon; and more sophisticated radiation therapy techniques, including drugs that sensitize cancer cells to and others that protect normal cells from radiation's effects.

The early success of combined modality therapy in increasing survival for women with breast cancer is even more impressive today. We now also have encouraging results from a study of cancer of the rectum. Patients who received radiation, chemotherapy or both in addition to surgery survived free of disease two to five times longer than patients who had only surgery. Colorectal cancer is second only to lung cancer in the number of new cases estimated for 1981.

Last year we established a new program to evaluate biological response modifiers—agents that exploit the body's natural defense mechanisms. One of these agents is interferon. We have worked closely with the

pharmaceutical industry to open up sources for all three types of interferon (leukocyte, lymphoblast and fibroblast) within the United States. Although interferon is still very expensive, the competition generated by our proposal lowered the cost considerably. Our clinical studies are in progress in seven institutions. The ability to synthesize pure forms of interferon with recombinant DNA techniques may make the product even cheaper. NCI will begin tests this February in conjunction with Hoffmann-La Roche, Inc. on one of these pure interferon preparations. Two new biological response modifiers we will evaluate this year are thymosin and MVE-2, a synthetic substance that stimulates the immune system.

BASIC BIOLOGY: A revolution has taken place over the past decade in the field of basic biology. The ability to clone animal DNA in bacteria using recombinant DNA technology and the capacity to sequence and read the genetic code of DNA have opened our eyes to a whole new way of looking at genes and the protein products of genes. We are intrigued by the sensitivity of these new techniques for exploring the subtle differences between normal and cancer cells. Once understood, these differences can be exploited for the prevention, diagnosis and treatment of cancer.

In 1971, the discovery of an enzyme, reverse transcriptase, focused the attention of scientists on a certain class of tumor virus that carries its genetic information in the form of RNA. Some very exciting findings have come from the study of these viruses. Perhaps most exciting is the recent discovery that they appear to be similar to elements called transposons. Transposons are nomadic genes. Due to a special structure, they are able to pop into and out of a cell's chromosome. In bacteria these structure appear to act as switches, turning on genes when they become inserted next to them. Scientists are now using recombinant DNA technology to decipher the genetic code of the RNA tumor viruses. This information may tell us how under certain circumstances these viruses switch on genes that cause cells to grow out of control.

Mr. Chairman, we consider it essential to find ways to preserve the flexibility that allows us to respond to new leads, such as some of those I have presented. Last year through an NCI management initiative we reviewed every contract, one by one. Reductions were made where possible, and savings were redirected to other programs. We will continue this process in the future, phasing out projects that have served their purpose and redirecting funds to promising new areas.

NTP COMMITTEE FINDS FIVE OF 11 TEST REPORTS SHOWED "LIMITED" EVIDENCE

The National Toxicology Program's Technical Review Committee, using for the first time the IARC categories for assessing the strength of carcinogenicity as shown in bioassays, found that five of 11 compounds fit the IARC criteria for "limited evidence of carcinogenicity" as determined in the NCI testing program.

Some committee members felt that one of the five —C.I. Disperse Yellow 3—may have met the criteria for "sufficient evidence of carcinogenicity," IARC's strongest statement.

Reports on six compounds concluded that there was no evidence of carcinogenicity in either sex of either species and thus met the IARC criteria for "negative evidence."

The four categories are defined as:

- Sufficient evidence—increased incidence in multiple species or strains, or in multiple experiments, or to an unusual degree.
- Limited evidence—carcinogenic in a single species, strain or experiment, or the experiments were restricted by various inadequacies.
- Inadequate evidence—because of major limitations the tests cannot be interpreted either way.
- Negative evidence—within limits of the test, no carcinogenicity was observed.

(See ***The Cancer Letter,*** Jan. 23, for more detailed descriptions of the IARC categories.)

The bioassays were:

11-aminoundecanoic acid, a monomer used in the manufacture of the polyamide, nylon-11. Carcinogenic in male rats, inducing tumors in the liver and bladder. Not carcinogenic in female rats. No clear evidence of carcinogenicity in mice of either sex. IARC category—limited evidence of carcinogenicity.

Eugenol, a widely used flavor additive and chemical intermediate. There was evidence that eugenol increased liver tumor incidence in mice, but the results were judged to be equivocal because of the limited weight of this evidence. It was not carcinogenic in rats of either sex. IARC category—limited evidence, but an equivocal one.

C.I. disperse yellow 3, a textile dye. It induced liver tumors in male rats and female mice. In addition, the stomach tumors found in male rats may have been induced by chemical administration but the increased incidence was not statistically significant. With carcinogenicity in two species, it appeared to have met the IARC criteria for sufficient evidence of carcinogenicity, but some committee members felt the weight of evidence was not that strong. At the least the test demonstrated limited evidence, and possibly sufficient.

C.I. solvent yellow 14, a widely used monoazo dye. The compound was associated with statistically significant increased incidences of neoplastic nodules of the liver in rats of both sexes but not in mice of either sex. Limited evidence.

D and C red No. 9, a pigment for topical drugs and cosmetics. Carcinogenic in male rats, and a significant trend in female rats. As submitted to the committee,

the report had said that a carcinogenic trend could not be established in female rats, but felt the evidence was stronger than that. IARC category, limited evidence.

No evidence of carcinogenicity, and thus in the "negative evidence" category, was found in the reports on vinylidene chloride, a widely used chemical intermediate and monomer; gum arabic, a widely used food stabilizer; guar gum, another food stabilizer; tara gum, a stabilizer for cosmetics and foods; agar, a gelling agent used in foods and pharmaceuticals; and C.I. acid orange 10, a textile dye.

The NTP Board of Scientific Counselors, when it accepted the IARC categories last month, also agreed at least tentatively that only the "sufficient evidence" category would carry with it a statement warning that the chemical presented a carcinogenic risk to humans. The "limited evidence" and "inadequate evidence" categories both concluded that "in the absence of other data, no evaluation can be made about the potential carcinogenicity for humans."

The "negative evidence" category "does not necessarily mean that the chemical is not a carcinogen inasmuch as the experiments are conducted under a limited set of circumstances," the NTP Board statement said.

Review committee members were not too happy with the new system. "I don't think the limited evidence category is adequate," said James Swenberg. "It can be limited for various reasons. I am strongly in favor of the Griesemer-Cueto system (devised by those former NCI Bioassay Program executives for relating test results to human risk)."

"There is a difference between limited and inadequate evidence," Roy Shore said, although as applied to the human risk, no difference is assumed in the Board's policy. "That needs to be fleshed out a little more."

Committee member Joseph Highland said he was "troubled" by the gap between sufficient and limited evidence, and that he also favored the Griesemer-Cueto system.

NTP Deputy Director John Moore, in response to Highland's question on whether benign tumors are a factor in the rating system, pointed out that IARC considers neoplastic nodules as malignancies in determining statistical significance. The review committee at its last meeting adopted the policy of separating neoplastic nodules from malignancies in considering the reports.

James Huff, assistant to Moore on the NTP staff, said that "the problem with the Griesemer-Cueto system and the reason it fits our purposes better than the IARC statement is that it came out of our program. The IARC statement is geared for looking at the world literature."

"You can't use a canned statement on human risk," Swenberg insisted.

"We're not interested in what causes cancer in rats," committee Chairman Margaret Hitchcock said. "We're interested in what causes cancer in humans. That's the sole reason we are here."

"We're peer reviewing the science and adequacy of bioassay data. Human risk assessment is not our job," Highland said.

NCI ADVISORY GROUP, OTHER CANCER MEETINGS FOR MARCH, APRIL, FUTURE

Large Bowel Cancer Review Committee—March 2-3, M.D. Anderson Hospital, Houston, open March 2, 7:30 p.m.—8 p.m.
Molecular Interrelation of Nutrition & Cancer—March 4-6, Houston, Shamrock Hilton; M.D. Anderson 34th annual Symposium on Fundamental Cancer Research. 6723 Bertner Ave., Houston 77030, phone 713-792-3030.
American Radium Society 63rd Annual Meeting—March 4-8, Hyatt Regency Hotel, Phoenix. Scientific sessions will include reports on therapy of gynecologic, genitourinary, breast, hematologic, gastrointestinal, CNS, and head and neck cancers. A symposium will be held on management of early breast cancer. Morton Kligerman will present the 46th annual Janeway Lecture; his topic will be "Pions, Protectors: Examples of a Vigorous Decade in Radiotherapy."
Texas Society of Cytology—March 6-7, Amfac Hotel, Dallas-Fort Worth Regional Airport, 10th annual meeting.
Assn. of Community Cancer Centers—March 6-8, Washington D.C. Hyatt Regency Hotel, 7th National Meeting. ACCC, 4733 Bethesda Ave., Suite 410, Bethesda, Md. 20014. Phone 301-654-2033.
Multimodal Treatment of Melanoma—March 7, Roswell Park continuing education in oncology.
Current Topics in Biostatistics & Epidemiology—March 8-9, NIH Fogarty International Center. Memorial symposium honoring the late Jerome Cornfield.
Cancer Control Grant Review Committee—March 9-10, NIH Bldg 31 Rm 7, open March 9, 8—8:30 a.m.
19th Annual National Conference on Breast Cancer—March 9-13, Hotel Del Coronado, San Diego. Contact American College of Radiology, Breast Cancer Conference, 6900 Wisconsin Ave., Chevy Chase, Md. 20015.
Cancer Special Programs Advisory Committee—March 12-13, NIH Bldg 31 Rm 10, open March 12, 9—10 a.m.
4th Annual Symposium on Patient Education—March 12-15, Golden Gateway Holiday Inn, San Francisco.
Childhood Cancer—Triumph Over Tragedy—March 13-14, 16th Annual San Francisco Cancer Symposium, San Francisco Hyatt Regency. West Coast Cancer Foundation, 50 Francisco St., Suite 200, San Francisco 94133.
Symposium on Rectal Cancer—March 13-14, Univ. of Erlangen Nurnberg, Erlangen, Fed. Rep. of Germany.
Photochemical Toxicity—March 16-17, Uniformed Services Univ. of the Health Sciences, Bethesda. Seventh science symposium sponsored by the Food & Drug Administration.
3rd International Conference on the Adjuvant Therapy of Cancer—March 18-21, Tucson Convention Center. Contact Mary Humphrey, Cancer Center, Arizona Health Sciences Center, Tucson 85724.
Cancer Center Support Grant Review Committee—March 19-20, NIH Bldg 31 Rm 6, open March 19, 8:30—10 a.m.
Clinical Cytopathology for Pathologists—March 22-April 3, Johns Hopkins Univ. School of Medicine postgraduate course. Johns Hopkins Hospital, 605 Pathology Bldg, Baltimore 21205.
Gynecologic Oncology—March 23-24, Johns Hopkins Univ.,

Turner Auditorium, nursing seminar. Course Coordinator, Johns Hopkins, Turner 22, 720 Rutland Ave., Baltimore 21205, 301-955-5880.

UICC Multidisciplinary Project on Breast Cancer—March 31-April 3, Leeds Castle, Kent, U.K. UICC, 3, rue du Conseil-General, 1205 Geneva, Switzerland.

International Symposium on Markers for Diagnosis and Monitoring of Human Cancer—April 1-3, Milan. Segretaria Scientifica, Istituto Nazionale dei Tumori, Via Venezian 1, 20133 Milan, Italy.

National Prostatic Cancer Review Committee—April 2, Roswell Park Memorial Institute, open 8:30–9 a.m.

Herpes Viruses As Oncogenic Agents—April 2-3, Chapel Hill, N.C. Fifth annual symposium of the Univ. of North Carolina Cancer Research Center. Box 30, MacNider Bldg., UNC School of Medicine, Chapel Hill 27514.

Control of the Phenotypic Expression in Normal & Transformed Cells—April 2, Roswell Park continuing education in oncology.

Diagnosis & Treatment of Neoplastic Disorders—Medical, Surgical, Radiotherapeutic Aspects—April 2-4, Johns Hopkins Univ., Contact Program Coordinator, Turner Auditorium Rm 22, 720 Rutland Ave., Baltimore 21205, 301-955-5880.

2nd International Lymphoma Conference—April 5-10, Athens. Sponsored by the Univ. of Athens and Univ. of Southern California School of Medicine. J. Parker, Dept. of Pathology, USC, 2025 Zonal Ave., Los Angeles 90033.

European Regional Conference on Undergraduate Cancer Education—April 6-8, Geneva. Contact UICC, address above.

9th International Symposium on the Biological Characterization of Human Tumors—April 7-11, Bologna, Italy. Contact W. Davis, IARC, 150 Cours Albert-Thomas, 69372, Lyon Cedex 2, France.

22nd Annual General Meeting of the British Assn. for Cancer Research—April 13-15, Keele, U.K. M. Moore, BACR, Paterson Labs, Christie Hosp. & Holt Radium Inst., Manchester M20 9BX, U.K.

Biometry & Epidemiology Contract Review Committee—April 16, NIH Bldg 31 Rm 8, open 9–9:30 a.m.

International Symposium on Prevention of Occupational Cancer—April 21-24, Helsinki. Epidemiology of occupational cancer, methodology of risk evaluation, prevention and control of risk. Inst. of Occupational Health, Haartmaninkatu 1, 00290, Helsinki, 29, Finland.

Biology of the Interferon System—April 21-24, Erasmus Univ., Rotterdam. Nature of interferon in the immune system, application of human interferons in cancer patients. Interferon 1981, Erasmus Univ., P.O. Box 1738, Rotterdam, Netherlands.

Human Values & Cancer—April 23-25, Washington D.C., Washington Hilton Hotel. Chaired by Jimmie C.B. Holland, MD, chief of the psychiatry service of Memorial Sloan-Kettering Cancer Center, who will deliver the keynote address on the humanistic side of cancer care. Topics will include attitudes and communications, teaching of psychosocial and human issues, evaluation of psychosocial research, and techniques of psychosocial and social support. Contact American Cancer Society, 777 Third Ave., New York 10017.

Oncology Update 1981—April 25, Century Plaza Hotel, Los Angeles; an update for the medical community on the study and treatment of cancer. Northridge Hospital Foundation, 18300 Roscoe Blvd., Northridge, Calif. 91328. Attn: Sandra Rozzen.

72nd Annual Meeting of the American Assn. for Cancer Research—April 27-30, Washington D.C., Sheraton Hotel. Dr. Frederick Philips, AACR, MSK Cancer Center, 1275 York Ave., New York 10021.

Conference on Health Education About Cancer—April 28-May 1, Brisbane. Australian Cancer Society, Box 4708, Sydney, NSW 2001, Australia.

17th Annual Meeting of the American Society of Clinical Oncology—May 1-2, Washington D.C. Sheraton Hotel. A. Van Horn III, ASCO, 435 N. Michigan Ave., Suite 1717, Chicago 60611.

6th Annual Congress of the Oncology Nursing Society—May 4-6, Baltimore Convention Center. Activities will include a variety of research abstract sessions, roundtable discussions, and instructional sessions devoted to topics in cancer nursing practice, education, administration and research. Nancy Berkowitz, ONS, 701 Washington Rd., Pittsburgh 15228, 412-344-3899.

FUTURE MEETINGS

Conference on Biostatistics in Clinical Oncology—June 21-26, Memorial Sloan-Kettering Cancer Center. Sponsored by NCI and the Biometrics Section of the American Statistical Assn. Application deadline April 1. Contact Valerie Mike, PhD, Biostatistics Laboratory, MSK, 1275 York Ave., New York 10021.

Progress in Cancer Control 1981: Issues in Screening & Cancer Communications—Sept. 28-29, Roswell Park Memorial Institute. Sponsored by the Assn. of American Cancer Institutes, RPMI, Assn. of Community Cancer Centers, the National Cancer Institute of Canada, New York State Div. of the American Cancer Society, and the International Union Against Cancer. Intended to provide a forum for cancer control scientists in centers to review their experiences in these fields and to identify avenues for future research and program development. Abstracts are invited in areas of cancer screening and early detection, and/or communications and public education. Deadline for abstracts is June 1. Submit them to, and contact for information: Dr. Curtis Mettlin, Program Coordinator, RPMI, 666 Elm St., Buffalo 14263, phone 714-845-4406.

Fourth Annual San Antonio Breast Cancer Symposium—Nov. 6-7, sponsored by the Univ. of Texas Health Science Center at San Antonio and the Cancer Therapy & Research Center of South Texas. Papers on experimental biology, etiology, prevention, diagnosis and therapy of breast cancer are invited; abstract deadline is June 1. Contact Office of Continuing Education, UTHSCSA, 7703 Floyd Curl Dr., San Antonio 78284, phone 512-691-7295.

3rd Workshop on Human Tumor Cloning Methods—Jan. 10-12, 1982, Univ. of Arizona, Tucson. Cochairmen are Sydney Salmon and Jeffrey Trent. The format will differ from the first two workshops. An optional basic "primer" course (including wet laboratory) will be held Jan. 10. The next two days will include presentations of invited and competitively selected papers by established investigators in the field. Deadline for abstracts is Sept. 14, 1981. Contact Mary Humphrey, UA Cancer Center, Tucson 85724, phone 602-626-6044.

First International Symposium on the Modulation and Mediation of Cancer by Vitamins—Feb. 23-26, Univ. of Arizona, Tucson. Cochairmen are Frank Meyskens Jr., UA, and Keda Prasad, Univ. of Colorado. Contact Mary Humphrey, address above.

The Cancer Letter _Editor Jerry D. Boyd

Published fifty times a year by The Cancer Letter, Inc., P.O. Box 2370, Reston, Virginia 22090. Also publisher of The Clinical Cancer Letter.