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

SENATE SUBCOMMITTEE ADDS $98 MILLION TO NCI'S FY 1984 BUDGET, ASSURING SUBSTANTIAL INCREASE

The Senate Labor-HHS Appropriations Subcommittee has added $98 million to the Administration's request for NCI's 1984 fiscal year budget, all but assuring the Cancer Program of its first substantial increase in several years and probably the first increase that exceeded inflation since 1975. The House Appropriations Committee previously had added $81 million to NCI's

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In Brief

REREVIEWED CCOP APPLICATIONS WON'T BE FUNDED; POTTER RECRUITING FOR NEW MEDICAL ONCOLOGY CHIEF

BAD NEWS for the Community Clinical Oncology Programs whose applications were rereviewed because of various alleged deficiencies in the first review: the new review didn't change anything, and there will be no additional awards recommended to the National Cancer Advisory Board next week. . . . JOHN POTTER, director of Vincent Lombardi Cancer Center at Georgetown Univ., is actively recruiting for a director of medical oncology, to replace Philip Schein, who is leaving to become vice president of SmithKline. Those interested should contact Potter, Lombardi Cancer Center, 3800 Reservoir Rd., Washington D.C. 20007. . . TWO VACANCIES still to be filled by NCI's Div. of Extramural Activities are the executive secretary positions of the Cancer Clinical Investigation Review Committee and the Cancer Special Programs Advisory Committee. Dorothy MacFarlane left CCIRC for a position in the Div. of Resources, Centers & Community Activities, and William Sanslone left CISPAC to join the National Heart & Lung Institute. . . . CHARLES LEMAISTRE, president of the Univ. of Texas System Cancer Center, and Roger Bolger, president of the UT Health Sciences Center, joined this week in dedicating the Murray L. Copeland Memorial Conference Room at M.D. Anderson . . . . RESEARCHERS at Mt. Sinai Medical Center in New York—Roy Jones, Robert Frank and Terry Mass—have urged nurses, pharmacists and lab workers who prepare drugs for administration to cancer patients to follow procedures similar to those recommended for lab workers exposed to hazardous substances. In the absence of definitive data on risks, such precautions would be "prudent," they wrote in an article in the current issue of "Ca".

NCI BUDGET PICTURE BRIGHTEST IN YEARS; GRANTS TO BE FULLY FUNDED

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budget over the Administration's request. The traditional practice has been to split the difference when the bill goes to conference; if that is followed this year, splitting the $17.2 million difference would give NCI an appropriation of about $1.075 billion (one billion, 75 million), almost identical to the 1984 bypass budget request.

That would be the first time since Congress gave NCI its unique bypass budget authority that the final budget was even close to the bypass request.

The House passed the appropriations bill last week without changing any of the committee's figures for NIH.

The full Senate Appropriations Committee was scheduled to act this week on the subcommittee's markup. The bill could go to the Senate floor anytime after that.

There was little chance that Congress would complete action on the appropriations bill before the end of the fiscal year, Sept. 30. A continuing resolution, providing interim financing for the Labor, HHS, and Education departments will be necessary. However, unlike last year and other years previously, it appears that Congress and the President will agree on an appropriations bill early enough in the fiscal year to prevent the uncertainty that accompanies the short term continuing resolutions. The White House has indicated that the House bill would be acceptable to President Reagan, and he probably would go along with a modest increase in the House-Senate compromise.

The House, in adding the $81 million extra for NCI, directed that most of the increase should go to fund grants at or near their recommended levels; restore funds cut from the Cancer Centers Program; pay the full indirect costs of grants; add some money for clinical education and fellowships; and put some back into research contracts.

No information was available early this week on how the Senate would direct its additional funds to be spent. Most likely, the Senate subcommittee, chaired by Lowell Weicker (R.-Conn.), wrote in most of the earmarks demanded by the House; possibly added some for grants to increase the percentage of approved grants funded; possibly put in some more for research contracts; and perhaps beefed up the construction grants budget, as requested every year by NCI and cut out every year by the Office of Management & Budget.

Neither the House nor Senate bills include funds for National Research Service Awards, since that program's authorization has expired. It is not a controversial program and no doubt will be renewed. The Administration's budget had requested $22.8 million for NCI's NRSAs, and that figure was included in the $1.068 billion and $1.075 billion totals in the figures compiled by The Cancer Letter.

NCAB PROBABLY NOT FACING CONTROVERSY THIS MEETING, WILL HEAR PDQ ISSUE

The National Cancer Advisory Board's 47th meeting next week (Oct. 3-5) probably will be missing much of the controversy that has marked most of the meetings for the past two years, although the issues of how extensively to promote the PDQ system (Protocol Data Query) and what to include in the system may lead to some debate.

Items on the agenda include an update on AIDS by NCI Associate Director Peter Fischinger; a discussion of tumor cell invasiveness by Lance Liotta, chief of the Laboratory of Pathology in the Div. of Cancer Biology & Diagnosis; a discussion on the state of the art on and NCI's support of respiratory cancer by John Minna, chief of the NCI-Navy Medical Oncology Branch, and Andrew Chiarodo, chief of the Organ Systems Branch; an overview of the Div. of Resources, Centers & Community Activities' smoking program by DRCCA Deputy Director Joseph Cullen; and a on the small business grants program by Div. report of Extramural Activities Director Barbara Bynum.

The respiratory cancer discussion is on the agenda because of the Board's interest in establishing it as one of the organ systems to be included in the new Organ Systems Program. Board member Robert Hickey is the chief advocate of that move.

The PDQ issue will be brought up by Board member Gale Katterhagen in his report on the meeting earlier this month of his Committee on Cancer Control & the Community. The Board had referred the PDQ promotion issue to the committee at the Board's May meeting.

The committee readily agreed on how PDQ should be promoted (The Cancer Letter, Sept. 9). Both NCI and the computer utility service vendors which take on PDQ will promote it to physicians, with NCI promoting the data base itself and the vendors promoting their

specific services in relation to PDQ. PDQ will not be promoted directly to the public, but NCI will continue promoting the availability of up to date cancer information through the Cancer Information Service, without direct reference to PDQ.

A controversy arose at the committee meeting when American Medical Assn. representatives, backed by NCAB member Ed Calhoun, objected to including names of several thousand physicians in the data base. They contended that this would constitute an inappropriate referral service. The committee agreed and approved the promotion option with the provision that the names be deleted from the data base.

Director Vincent DeVita said that the names were included after he had discussed PDQ with various professional societies and they had agreed to permit their membership lists to be included. He denied that it was a referral service but is "an information service. . . I'm not prepared to pull them off now. I am willing to take the consequences. If it turns out to be a mistake, we will change it."

The data base will include names of physicians participating in NCI supported clinical trials, including the cooperative groups and the Community Clinical Oncology Program; members of the American Society of Clinical Oncology, American Society of Hematology, American Society of Pediatric Hematology & Oncology, American Society of Therapeutic Radiologists, Society of Gynecologic Oncology, Society of Surgical Oncology, and Assn. of Community Cancer Centers. It also will identify institutional members of the American Assn. of Cancer Institutes, American College of Surgeons approved hospitals, Assn. of Community Cancer Centers, and comprehensive cancer centers. Each protocol listed will include names of the principal investigators, with addresses and phone numbers.

Another issue may be the identification of the 300 physicians who helped select the protocols and regimens included in the system.

DCCP BOARD CONCEPT APPROVALS INCLUDE GRANT, NEW, RECOMPETING CONTRACTS

The Board of Scientific Counselors of NCI's Div. of Cancer Cause & Prevention gave concept approval to one new grant program, a variety of new contract supported projects with an estimated cost in first year awards totaling nearly $2 million, two contract recompetitions and a number of noncompetitive contracts at the Board's meeting earlier this month. Last week's issue of The Cancer Letter reported some of those actions, and the remaining follow:

Additional new competitive contract supported projects given concept approval by the Board were:

Mortality study of workers exposed to toluene diisocyanate. Proposed first year award, $75,000, two years. Justification:

The National Toxicology Program completed a gavage carcinogenesis bioassay of TDI in rats and mice in 1982. TDI was carcinogenic in rats causing subcutaneous fibromas or fibrosarcomas in males and females, pancreatic acinar-cell adenomas in males and pancreatic islet-cell adenomas, neoplasatic nodules of the liver and mammary gland fibroadenomas in females. TDI was also carcinogenic in female mice causing hemangiomas, hemangiosarcomas and hepatocellular adenomas. All tumors demonstrated dose response relationships. Commercial use of TDI comes from the reaction of TDI with hydroxy compounds to form polyurethane products such as foams, surface coatings and sealants. Widespread commercial use of TDI began in the 1950s and production volume has been steadily increasing. An estimated 50,000-100,000 workers are currently exposed to TDI. In light of the animal data and the large number of workers exposed, a cohort mortality study is needed to determine its potential for human carcinogenicity. Because inhalation is the route of exposure, and because TDI is highly reactive, we hypothesize that the respiratory tract would be a likely site for carcinogenic action of TDI.

If this study indicates that lung cancer is in excess and the excess is in the range of risks that could be explainable by smoking, then the effects of smoking will be assessed.

A cohort of 5,000-7,000 TDI exposed workers employed in three plants has been identified. These plants manufacture molded polyurethane foam, primarily for the automobile industry. Personnel records have been reviewed and are considered adequate for the conduct of such a study. An additional 1,000-2,000 workers from one to three plants will be added to the cohort. However, when persons with insufficient latency and duration of employment are excluded from the cohort, the final cohort size is expected to be about 4,000.

Elizabeth Weisburger is the NCI project officer.

Mortality study of workers exposed to Halowax. Proposed first year award, $60,000, three years. The justification:

The objective is to determine whether Hal-Owax exposure is associated with an excess risk of soft tissue sarcoma, lymphoma or liver cancer. Chlorinated naphthalenes, sold under the trade name Halowax, are known chloracnegens and hepatotoxins. They have not been tested for carcinogenicity in animal bioassays but are suspect carcinogens based on their metabolism via arene oxides and structural analogy with chlorinated dibenzodioxins. Chlorinated naphthalenes also cause vitamin A depression in exposed animals, which may increase their carcinogenic potential. The proposed study may have implications for the long term toxicity of other

chlorinated hydrocarbons which have similar acute toxicity, among them, polychlorinated biphenyls (PCBs), chlorinated dibenzodioxins or TCDDs and chlorinated dibenzofurans.

Previous studies have suggested an association between soft tissue sarcoma, lymphoma or liver cancer and TCDD exposure in humans and between liver tumors and PCB and TCDD exposure in animals.

The study population will be selected from 8,000 workers exposed to Halowax in the early 1940s at a plant manufacturing Navy cable. Industrial hygiene measurements taken in 1943 showed air concentrations in the range of 0.5 to 5 mg/cu m in areas of the plant remote from operations using Halowax. Two groups will be selected for study—800 individuals with dermatitis (most presumed to have had chloracne) and 1,600 individuals with the longest potential exposure but without chloracne.

Standard NIOSH methods will be used for coding the masterfile, vital status followup, nosology of death certificates and life table analysis for computing standardized mortality ratios. The current number of workers exposed to chlorinated naphthalines is 5,000. The study will be of value in investigating the ultimate health outcomes of other worker groups exposed to potential chloracnegens.

Sheila Hoar is the NCI project officer.

An assessment of worker exposure in the newsprint industry. Proposed award, $25,000, one year. Justification:

The objective is to determine the extent of exposure of newsprint workers to polycyclic aromatic hydrocarbons (PAHs). Historically, the printing occupation, particularly newsprint pressroom workers, have experienced high rates of cancer of the respiratory tract. A recent NIOSH sponsored mortality study by Nicholson et al (1981) demonstrated a 2.5 to 3 fold increase in buccal and pharyngeal cancer with a slight increase in lung cancer in this occupation. This confirmed an earlier study by Lloyd (1977) who found an increased proportion of upper respiratory cancer deaths among pressmen. Additional studies in the printing trade tend to support these findings. Toxicological studies have shown that newsprint inks contain PAHs which may be responsible for the high rate of respirable tract malignancy. It has been established by Bingham et al (1980) that petroleum and asphalt pitch, components of newsprint ink, are highly carcinogenic in mice. Other studies by Steinbreck (1929) and later by Carter et al (1969) demonstrated that certain inks caused tumors in mice.

NIOSH is currently testing bulk samples of various newsprint inks and their components for identification and concentration of PAHs. The Industrywide Studies Branch plans to investigate the extent of exposures that newspaper pressmen have to PAHs. This will be accomplished by characterizing the size distributions of the ink mist aerosol in the pressroom to determine what fraction of the total aerosol mist is actually deposited in the respiratory tract. The various size distributions will then be analyzed for PAHs content in order to estimate exposure levels.

John Cooper is the NCI project officer.

"I don't have much faith in measuring particle size," Board member Donald Davies commented. "Don't you intend to do biological measuring? This would be an opportunity to look at the body burden." William Halperin of NIOSH said that biological measuring was not planned to be in the workscope.

"That would be a good followup study," DCCP Director Richard Adamson said, "once we know what's in the inks."

Board member Charlotte Friend noted that inks have changed in recent years, and Halperin said that that would be taken into account in the study.

Board member Carl Shy, commenting on the NCI/NIOSH collaboration (the preceding project proposals will be paid for with NCI "pass through" funds, with NIOSH contributing staff time to manage them), said, "I would like to see more projects of much stronger mutual interest. Most of these are of marginal interest to NCI. Of more common interest would be finding biological indicators and validating them. There should be more emphasis on truly joint projects. It seems to me that $2 million would be better spent on one good project of strong mutual interest."

"This NIOSH-NCI relationship has come a long way," Board member Gilbert Omenn said. "Certain members of Congress had insisted on transferring NCI funds to NIOSH and EPA. The alternative has been to build a relationship. Carl's suggestion and those of others should be the basis for continuing that relationship. There is plenty of basis for good collaboration, in looking at biological indicators in depth and collaborative studies in biochemical epidemiology."

Application of explant culture techniques to human-animal comparative biochemical studies in chemical carcinogen risk assessment. Proposed first year award, $110,000, two years (collaborative study with the Environmental Protection Agency). Justification:

Objective is to use explant organ culture to study, in a comparative sense, the responses of human and laboratory animal target organ tissue to two chemicals known to be carcinogens but that also have commercial importance. Tissues from several human organs including bladder, bronchus and peripheral lung can be maintained in culture using supplemented serum free media. Thus via explant culture, the responses of human cells to chemical carcinogens can be directly compared to the analogous cells from appropriate laboratory animals. This proposal outlines a study of the metabolism, DNA adduct formation and/or removal and DNA repair response elicited in cultured human bladder and bronchus explants exposed to 4,4'-methylene-bis (2-chloroaniline) (MOCA) and benzotrichloride (BTC). These responses will be directly compared to those observed in cultured explants of these organs from dogs and rats. The proposal will measure the responses of human target organs to suspected human carcinogens and compare them with the response of those organs of laboratory animals known to be susceptible to the carcinogenic effects of these chemicals.

A number of chemical carcinogens exert their carcinogenic effects only after enzymatic conversion to reactive intermediates which can bind covalently to cellular nucleophiles including DNA. Conversely many chemicals are detoxified via similar metabolic operations and hence the species specific responses to many chemical car-

cinogens may be a function of the particular metabolic patterns of that species.

Consequently, the kinetics initial DNA-carcinogen adduct formation, maximal adduct levels with dose administered, time course of adduct removal, the qualitative similarities and differences in the adduct types formed and/or removed will be evaluated with respect to the sensitive/resistant animal vs. human model (e.g. Daniel et al, Carcinogenesis 3: 198 (1983); ibid 3: 1345 (1983).

Subsequent to their formation, DNA-carcinogen adducts may induce secondary manifestations of DNA damage including strand breaks, alkaline labile sites and apurinic (AP) sites. There is now evidence that a) the formation of these lesions may be facilitated by cellular processes (e.g. N-glycosylases, apurinic endonucleases) and that b) such lesions when formed in replicating cells may have genotoxic consequences. Thus, the rate of formation of these secondary DNA lesions may be another factor in the overall susceptibility of that species to a particular chemical insult. The quantitation of DNA strand breaks and alkaline labile sites and endonuclease sensitive sites can be accomplished by application of sensitive DNA alkaline unwinding procedures which does not require radiolabeled DNA. The rate of formation and persistence of strand breaks and alkaline labile sites will be compared in the various animal strains and human tissues. In addition, the various organs will be evaluated for differences in the types and/or levels of specific repair glycosylases, and other repair enzymes. Another parameter in the susceptibility of a given organ in a particular species/strain may be its ability to ameliorate the DNA damage before it is permanently fixed. Two generally accepted methods of evaluating DNA repair are measurement of rate of loss of DNA carcinogen adducts and the detection of unscheduled DNA synthesis (UDS). Both of these methods can be adapted to explant culture and can be used as a third parameter in the overall human vs. laboratory animal comparison. The extent of DNA repair synthesis could be evaluated in the explant cultures of the animal and human tissues with respect to the sensitive-resistant model. In addition, the qualitative and quantitative nature of the DNA-carcinogen adducts and the persistance of the various adducts could be evaluated as detailed above.

MOCA is a chlorinated aromatic amine which is widely used as a curative chain extender in formation of polyurethane elasatomers. MOCA is a confirmed liver and lung carcinogen to rats and mice and causes urinary bladder cancer in dogs. It is estimated that 25,000 workers in the US are either directly or indirectly exposed to MOCA and levels of 450 ppb have been detected in the urine of MOCA production workers.

BTC is used as an intermediate in the synthesis of dyes and pigments (a number of which are produced in the US), for the synthesis of benzoyl peroxide, and for various herbicides. BTC has been shown to be a potent carcinogen to ICR mice producing tumors of the skin and lung as well as lymphomas. In addition, one study has reported on the occurrence of four cases of cancer (three lung cancers and one maxillary malignant lymphoma) among workers engaged in the production of benzoyl chloride, a commercial chemical produced from BTC.

These studies will focus specifically on the problem of comparative induction and/or subsequent elimination of DNA damage produced by commercial chemicals in human organs with those laboratory animals which have varying sensitivity to the carcinogenic effects of these chemicals. Both MOCA and BTC will be evaluated for the parameters discussed above in cultured human bladder and bronchus. These data will be directly compared to those obtained by treating cultured bladder and bronchus from both rats and dogs and such studies should provide useful data for comparing the relative role of these biochemical parameters on the initiation process in human organs relative to other animal species. Such data should be especially useful for making predictions of human health risk from laboratory animal bioassay data.

The Board approved the concept of recompeting two existing contracts. They are:

Breeding, maintenance and supply of congenic strains of mice for cancer research. Present contractor is Sloan-Kettering Institute. Proposed first year award is $100,000, three years. Justifiction:

For the past six and a half years the Biological Carcinogenesis Branch has supported a colony of congenic mice at Sloan-Kettering, with Edward Boyse as the principal investigator. Basic thrust of the effort has been the generation and characterization of strains of mice which are congenic for alternative alleles at loci which have been associated with leukemia and other neoplasms in mice. The ultimate goal was to reach the 20th generation for all strains to obtain inbred stock in which all mice are virtually genetically identical and homozygous for all their genes. To fulfill this task the contractor derived evaluated congenic strains representing discriminative alleles of genes of special interest in viral leukogenesis; maintained these strains, together with their inbred partner strains and the allele donor strains; and supplied these strains, not available elsewhere, to all requesting investigators. The loci being rendered congenic are the histocompatibility-2 antigen (H-2), thymus leukemia antigen (Tla), Friend virus (Fv-1), plasma cell antigen (Pca-1) and AK viral protein (Akvp). Strains are derived by crossing an inbred strain expressing one allele at a single locus (base strain) with a second strain (donor strain) expressing a different allele to produce a hybrid (F1). The F1 hybrid is backcrossed for a minimum of eight generations with selection of the desired allele at each generation. Thereafter, progeny homozygous for the desired allele are selected for further inbreeding.

Performance of the contractor has been outstanding in terms of development of congenic strains, record keeping, health surveillance of the colony, and distribution of mice. Valuable services and materials have been provided to the scientific community. The congenic strains developed under the contract now represent a unique resource. The development of the strains allows a direct approach to understanding retroviruses and their interaction with host cells. cDNA from these congenic strains may be used to define genes that control expression of either tumor specific antigens or differentiation antigens

and to elucidate their relationship to parts of the retrovirus genome. This research depends entirely on maintenance of the congenic stock developed during this contract.

In response to a survey letter, all recipients indicated that the congenic mice were of excellent quality and that Boyse was doing an outstanding job in developing the congenic strains and monitoring their genetic background. Twenty four of the 26 researchers using the mice in 1982 were extramural investigators. The payback system will continue to be used.

Garrett Keefer is the project officer.

Resource for collection and evaluation of human tissues and cells from donors with an epidemiological profile. Present contractor is the Univ. of Maryland. Proposed first year award, $425,226, four years. Justification:

Model systems for the study of carcinogenesis using cultured human cells are providing new opportunities to assess both mechanisms of carcinogenesis in human cells and host factors that influence an individual's susceptibility to carcinogenic agents, e.g., the metabolic balance between activation and deactivation of chemical procarcinogens. They also aid efforts to extrapolate carcinogenesis data from experimental animals to humans and to study the multistage processes of neoplastic transformation and progression. An important strategy in this approach is to conduct parallel studies using epithelial tissues and cells from experimental animals for the purpose of interspecies comparisons.

A resource is proposed for the collection of normal appearing and neoplastic human bronchial, intestinal, pancreatic and hepatic tissues and cells at the time of surgery from cancer and noncancer donors and during immediate autopsy of noncancer donors. Essential components of the resource will include (a) approval by the offeror's institutional committee for the protection of human subjects, (b) capability to obtain an epidemiological profile of the donors using trained interviewers, (c) proven methods for collecting human tissues and cells, testing for pathogenic microbial agents, culturing epithelial tissues and cells and rapidly transporting the specimens in a viable condition to NIH, and (d) expertise in evaluating the functional and pathological status of the normal as well as the tumor tissue by histochemical and immunological methods, and by light and electron microscopy. These human tissues and cells are essential for the multifaceted studies of carcinogenesis ongoing in the Laboratory of Human Carcinogenesis.

Glenmwood Trivers is the project officer.

The Board gave concept approval to six new contract supported projects which will be awarded on a sole source basis, and to noncompetitive extensions of two existing contracts:

* Quantitative analysis of chronic carcinogenic bioassays: the carcinogenic potency data base. Interagency agreement with the Dept. of Energy's Lawrence Laboratory, proposed first year award, $122,300, two years.

* International workshop on the use of in vitro transformation of established cell lines for prediction of carcinogenic chemicals. Proposed award of $15,000 to the International Agency for Research on Cancer to help support the workshop; IARC will contribute another $15,000.

* Thyroid disease following ^{131}I therapy for hyperthyroidism. Interagency agreement with Brookhaven National Laboratory. Proposed first year award, $95,000, three years.

* Cancer risk in patients irradiated for peptic ulcer. Contract with the Univ. of Chicago Hospital. Proposed first year award, $90,000, three years.

* Support services for immunoepidemiologic surveys of homosexual men in Hawaii. Contract with the Univ. of Hawaii. Proposed first year award, $100,000, three years.

* Conference and proceedings on reproductive aspects of human cancer. Estimated cost, $50,000.

* Risk of cancer following multiple chest fluoroscopies for tuberculosis in Connecticut. Contract extension for one year with Yale Univ., estimated cost, $150,000.

* Dichloroethane: drug interactions. Contract extension for six months with Midwest Research Institute. Estimated cost, $130,000.

The Board deferred action until its next meeting on two new contract proposals to be conducted under the collaborative arrangement with NIOSH. One was for a study on the effects of light monitoring of skin contaminated with PNAs, estimated to cost $125,000 a year for four years; the other, for a study of laryngeal cancer incidence in workers exposed to sulfuric acid, to cost $45,000 for one year.

NCI ADVISORY GROUP, OTHER CANCER MEETINGS FOR OCT., NOV., FUTURE

International Symposium on Cellular & Molecular Biology of Neoplasia--Oct. 2-6, Honey Harbor, Ontario, Canada. Contact Susan Oliphant, Ontario Cancer Institute, 500 Sherbourne St., Toronto, Ontario M4X 1K9, phone 416-924-0671, ext. 4998.

National Cancer Advisory Board Committee on Organ Systems Programs--Oct. 2, NIH Bldg 31 Rm 7, 6 p.m., open.

National Cancer Advisory Board--Oct. 3-5, NIH Bldg. 31 Rm 6, 8:30 a.m. each day. Closed Oct. 4.

NCAB Committee on Planning & Budget--Oct. 3, NIH Bldg 31 Rm 11A10, 7:30 p.m., open.

American Society of Therapeutic Radiology--Oct. 3-7, Bonaventure Hotel, Los Angeles. 25th annual meeting.

Consensus Workshop on Formaldehyde--Oct. 3-6, Little Rock, Ark. Contact Dr. William McCallum, HFT-100, National Center for Toxicological Research, Jefferson, Ark. 72079, phone 501-541-4513.

6th Congress of the Yugoslav Cancer Society--Oct. 4-7, Skopje, Yugoslavia. Contact I. Dimcev, Yugoslavia Cancer Society, 91000 Skopje, ul. Dame Gruev 3, Yugoslavia.

Biometry & Epidemiology Contract Review Committee--Oct. 5, NIH Bldg 31 Rm 7, open 9:30-10 a.m.

AIDS: A Clinical Update--Oct. 5, Roswell Park Memorial Institute, 9 a.m. Contact Gayle Bersani, Cancer Control & Epidemiology, RPMI, 666 Elm St., Buffalo, N.Y. 14263, phone 716-845-4406.

Clinical Aspects of Metastasis--Oct. 6-7, Roswell Park continuing education in oncology.

Society of Nuclear Medicine--Oct. 6-9, Seattle. Contact Jean Parker, PO Box 40279, San Francisco 94140.

International Congress of Laser Medicine & Surgery--Oct. 7-9, Detroit. Contact Registration Supervisor, 5th Annual Cong. of Laser Medicine & Surgery, Charles B. Slack Inc., 6900 Grove Rd., Thorofare, N.J. 08086.

7th Annual International Imaging Conference--Oct. 9-17, Kona, Hawaii. Contact Conference Secretary, Dept. of Radiobiology, West Park Hospital, 22141 Roscoe Blvd., Canoga Park, Calif. 91304, phone 213-340-0580, ext. 280.

Assn. for the Development of Cancer Research--Oct. 10-12, Paris. Contact Jacques Crozemarie, President, 16 BIX, Ave. P. Zaillant-Couturier, Boite Postale 300, 94803 Villejuif Cedex, France.

President's Cancer Panel--Oct. 12, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, 9 a.m.

International Symposium on Detection & Treatment of Minimal Residual Disease in Acute Leukemia--Oct. 12-14, Rotterdam. Contact Dr. J.W. van der Velden, PO Box 5201, 3008 AE Rotterdam, The Netherlands.

International Symposium on Peptide Hormones as Mediators in Immunology & Oncology--Oct. 13-15, Celle, West Germany. Contact Reiseburo Bangemann, Herr Michael Schnelle, Lister-Meile 78, 3000 Hannover 1, West Germany.

Advances in Cancer Treatment Research--Oct. 13-15, Baltimore. 7th annual symposium. Contact Univ. of Maryland School of Medicine, 10 S. Pine St., Rm 300, Baltimore 21201, phone 301-528-3956.

UICC Workshop on Doctor Involvement in Public Education About Cancer--Oct. 16-18, Kibbutz Shefayim, Israel. Contact David Reed, UICC, 3, rue du Conseil-General, CH-1205 Geneva, Switzerland.

Medical Oncology Review Course--Oct. 17-22, Honolulu. Contact Maxine Topping, Postgraduate Div., American College of Physicians, 4200 Pine St., Philadelphia 19104, phone 215-243-1200 or 800-523-1546.

Cancer Control Grant Review Committee--Oct. 17-18, NIH Bldg 31 Rm 8, open Oct. 17 8:30-9 a.m.

Symposium on Ex Vivo Plasma Immunoadsorption and Protein A in Cancer Therapy--Oct. 18, Hood College, Frederick, Md. Sponsored by NCI's Biological Response Modifiers Program. Contact Rachelle Daigneault, NCI FCRF, Box B, Frederick, Md. 21701, phone 301-695-1055.

Ultrasound Safety & Biological Effects--Oct. 18-21, New York Hilton, NYC. Contact American Institute of Ultrasound in Medicine, 4405 East West Highway, Bethesda, Md. 20814, phone 301-656-6117.

Clinical Trials in Cancer Medicine: Past Achievements and Future Prospects--Oct. 19-21, Fondazione G. Cini, Venice. 6th annual Bristol-Myers Symposium on Cancer Research. Contact Kathryn Bloom, Bristol-Myers Co., 345 Park Ave., New York 10154.

International Symposium on Medical Virology--Oct. 19-21, Anaheim, Calif. Contact Dr. Luis de la Maza, Dept. of Pathology, Univ. of California (Irvine) Medical Center, Orange, Calif. 92668, phone 714-634-6868.

NCI Div. of Resources, Centers & Community Activities Board of Scientific Counselors--Oct. 20-21, NIH Bldg 31 Rm 10, 8:30 a.m. each day.

NCI Div. of Cancer Biology & Diagnosis Board of Scientific Counselors--Oct. 20, NIH Lister Hill Center, Rm BlN 30B, 9 a.m.

Forum for Death Education & Counseling--Oct. 20-23, Holiday Inn Mart Plaza, Chicago. 6th annual conference. Contact Vickie O'Sullivan, Continuing Education, Rush-Presbyterian-St. Luke's Medical Center, 600 S. Paulina, Chicago 60612, phone 312-942-7095.

Recent Advances in Occupational Cancer--Oct. 21-23, San Francisco. Contact Univ. of California, Extended Programs in Medical Education, 1456 Ninth Ave., San Francisco 94122.

NIH Consensus Development Conference on Precursors to Malignant Melanoma--Oct. 24-26, Lister Hill Center Auditorium, 9 a.m. Contact Michele Dillon, Prospect Associates, Suite 401, 2115 E. Jefferson St., Rockville, Md. 20852, phone 301-468-6555.

Interscience Conference on Antimicrobial Agents & Chemotherapy--Oct. 24-26, Las Vegas, Nev. Contact R. Bray, American Society for Microbiology, 1913 Eye St.NW, Washington DC 20006.

Current Concepts in Medical Oncology--Oct. 24-28, Memorial Sloan-Kettering Cancer Center, New York. Contact Charlene Landis, CME Conference Planner, MSKCC, 1275 York Ave., New York 10021.

Biological Characterization of Human Tumors--Oct. 24-28, Brighton, England. 10th international symposium. Contact CCHTI Secretariat, Inst. of Cancer Research, Block E, Clifton Ave., Belmont, Sutton, Surrey SM2 5PX, England.

Developmental Therapeutics Contract Review Committee--Oct. 27-28, NIH Bldg 31 Rm 10, open Oct. 27 9-10 a.m.

Scripps Cancer Symposium--Oct. 31-Nov. 2, Sheraton Harbor Island Hotel, San Diego. 7th annual symposium for physicians and 3rd annual symposium for nurses. Contact Nomi Feldman, Conference Coordinator, 3770 Tansy, San Diego 92121, phone 619-453-6222.

Tutorial on Neoplastic Hematopathology--Oct. 31-Nov. 4, Pasadena, Calif. Contact Claude Weil, Tutorial Coordinator, International House, Univ. of Chicago, 1414 E. 59th St., Chicago 60637, phone 312-753-2277.

European Conferen e on Clinical Oncology--Nov. 2-5, Amsterdam. Contact 2nd ECCO, Organisatie Bureau, Amsterdam, BV Europaplein 14, 1078 GZ Amsterdam, The Netherlands.

Current Concepts in Cancer Therapy--Nov. 3-5, St. Louis. Contact Loretta Giacoletto, Office of CME, Washington Univ. School of Medicine, Box 8063, 660 S. Euclid St., St. Louis 63110, phone 314-454-3873.

Sixth Annual San Antonio Breast Cancer Symposium--Nov. 4-5, San Antonio. Contact Terri McDaniel RN, Cancer Therapy & Research Center, 4450 Medical Dr., San Antonio, Texas 78229, phone 512-690-0655.

Multimodality Therapy for Head & Neck Cancer--Nov. 4-5, Dearborn, Mich. Contact Don Ragan, PhD, Radiation Oncology Dept., Wayne State Univ., 4201 St. Antoine, Detroit 48201.

GI Malignancies--Nov. 4-5, Cincinnati. Contact Thomas O'Connor, Medical Staff Education, Bethesda Hospital, 619 Oak St., Cincinnati 45206, phone 513-559-6131.

Cancer Clinical Investigation Review Committee--Nov. 7-9, NIH Bldg 31 Rm 6, open Nov 7 8:30-9 a.m.

National Hospice Organization--Nov. 8-12, Minneapolis. Annual meeting and symposium. Contact Helen Noller, Conference Chairperson, 2344 Nicollet Ave., Suite 150, Minneapolis 55404, phone 612-871-7222.

Newer Perspectives in Human Lymphoma--Nov. 9-12, Shamrock Hilton Hotel, Houston. Contact Office of Conference Services, Box 18,

M.D. Anderson, 6723 Bertner Dr., Houston 77030, phone 713-792-2222.

Cancer Preclinical Program Project Review Committee--Nov. 9-10, NIH Bldg 31 Rm 9, open Nov. 9 9-10 a.m.

Molecular Events in Differentiation and Neoplasia--Nov. 10, Roswell Park continuing education in oncology.

Head & Neck Cancer Congress--Nov. 11-12, Marseille. Contact P. Gehanno, Societe Francaise de Carcinologie Cervico-Faciale, 53 bis rue Jouffroy, 75017 Paris, France.

4th Asian-Oceanian Congress of Radiology--Nov. 13-18, Bangkok. Contact X-Ray Computer Center, 137/3 Asoke Rd., Bankok 10110, Thailand.

Cancer Regional Studies Review Committee--Nov. 15, NIH Bldg 31 Rm 7, open 8:30-9:30 a.m.

Childhood Cancer: Current Controversies--Nov. 17-19, Caribbean Gulf Resort Hotel, Clearwater, Beach, Fla. Contact Cindi Butson or Randy Kraft, Seminar Coordinators, Florida Assn. of Pediatric Tumor Programs Inc., PO Box 13372, Univ. Station, Gainesville, Fla. 32604, phone 904-375-6848.

Field Trials on Oral Carcinoma & Bone Tumors of Facial Skull--Nov. 17-18, Basel, Switzerland. Contact J. Prein, Kiefer-und Gesichtschirurgie, Kantonsspital, 4031 Basel.

High Frequency Ventilation--Nov. 18-20, Memorial Sloan-Kettering Cancer Center. International symposium. Contact Charlene Landis, CME Conference Planner, MSKCC, 1275 York Ave., New York 10021, phone 212-794-6754.

European Society of Urological Oncology & Endocrinology--Nov. 24-26, Rome. Third Congress. Contact F. DiSilverio, Dept. Urology, Policlinico Umberto 1, Viale del Policlinico, 00161, Rome.

Radiological Society of North America--Nov. 27-Dec. 3, Chicago. 68th scientific annual meeting. Contact RSNA, 1415 W. 22nd St., Ste. 1150, Oak Brook, Ill. 60521.

Chemical Modifiers of Cancer Treatment--Nov. 27-Dec. 1, Banff, Canada. Contact Frances Glica, American College of Radiology, 925 Chestnut St., 7th Floor, Philadelphia 19107, phone 215-574-3154.

National Cancer Advisory Board--Nov. 28-30, NIH Bldg 31 Rm 6, 8:30 a.m. Annual program review. Open all three days.

Annual Scientific Meeting on Clinical Oncology--Nov. 30-Dec. 2, Brisbane. Clinical Oncology Society of Australia. Contact the society, POB 4708 GPO, Sydney NSW, 2001 Australia.

FUTURE MEETINGS

Role of Gastrointestinal Tract in Nutrient Delivery--Dec. 1-2, Shoreham Hotel, Washington D.C. Bristol-Myers Symposium on Nutrition Research. Registration deadline is Oct. 15. Contact Div. of Continuing Medical Education, Indiana Univ., 1120 S. Drive, FH224, Indianapolis 46223.

Reducing the Risk of Infection in Biomedical Laboratories--Dec. 1-2, Twin Bridges Marriott Hotel, Arlington, Va. Sponsored by the NIH Div. of Safety. Contact 1983 NIH Research Safety Symposium, 8630 Fenton St. Suite 508, Silver Spring, Md. 20910, phone 301-585-7400.

Symposium on Gynecologic Oncology--Dec. 3, Memorial Sloan-Kettering Cancer Center. Contact Charlene Landis, MSKCC, 1275 York Ave., New York 10021.

Comparison of Mechanisms of Carcinogenesis by Radiation and Chemical Agents--Dec. 6-7, National Bureau of Standards, Gaithersburg, Md. Sponsored by NCI Div. of Cancer Treatment and Div. of Cancer Cause & Prevention. Contact Mary Clark or Lynne Plummer, Verve Research Corp., 6110 Executive Blvd. Suite 250, Rockville, Md. 20852, phone 301-984-7188.

Advances in Cancer Therapy--Dec. 8-10, Waldorf-Astoria Hotel, New York. Sponsored by the American Cancer Society. Contact Dr. Nicholas Bottiglieri, ACS, 777 Third Ave., New York 10017.

Comprehensive Cancer Treatment--Feb. 2-4, 1984, St. Joseph's Hospital, Tampa, Fla. 10th annual Fred J. Woods/St. Joseph's Community Cancer Center Lecture Series. Contact Bruce Collison or Chuck Thomas, St. Joseph's Hospital, PO Box 4227, Tampa 33677, phone 813-870-4340.

Intra-arterial & Intracavitary Chemotherapy 1984--Feb 24-25, 1984, Holiday Inn at the Embarcadero, San Diego. Pharmacokinetic rationale and techniques, clinical trials, current research on novel approaches. Poster presentations invited, deadline Dec. 1. Contact Stephen Howell M.D., Univ. of California (SD), Dept. of Medicine T-012, La Jolla 92093.

Mediators in Cell Growth & Differentiation--March 6-9, 1984, Houston. Recent developments, growth factors for various cell types, role of soluble mediators. Contact Office of Conference Services, Box 131, M.D. Anderson, 6723 Bertner Ave., Houston 77030, phone 713-792-2222.

Impact of Biotechnology on the Immunobiology of Cancer--March 15-16, 1984, Univ. of North Carolina School of Medicine, Chapel Hill. Contact Pam Upchurch, Cancer Research Center, Box 30 MacNider Bldg, UNC, Chapel Hill 27514.

Fourth International Conference on the Adjuvant Therapy of Cancer--March 21-24, 1984, Tucson Convention Center, Tucson. Sponsored by the Univ. of Arizona Cancer Center. Deadline for abstracts is Dec. 1. Contact Mary Humphrey, Conference Coordinator, Univ. of Arizona Cancer Center, Tucson 85724, phone 602-626-6044.

Management & Theory of Pain in Cancer Patients--April 5-7, 1984, Four Seasons Hotel, Houston. Directed toward the practitioner interested in the management of pain in cancer patients. Contact Office of Conference Services, Box 131, M.D. Anderson, 6723 Bertner Dr., Houston 77030, phone 713-792-2222.

Breast Cancer: An International Seminar--April 8-14, 1984, Edinburgh, UK. Contact Courses Dept., The British Council, 65 Davies St., London W1Y 2AA.

The Cancer Letter _Editor Jerry D. Boyd

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