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President's Budget Asks Increase Of 8.5 Percent For NCI in FY 1989; Still No Construction Money

It isn't the bypass budget request of $2 billion, but the President's 1989 fiscal year budget submitted last week to Congress does include nearly $1.6 billion for NCI, an

(Continued to page 2)

In Brief

Disapproved CCOP Wins Appeal, New Review; Trish Greene Named ACS VP For Nursing

THE CCOP that was disapproved by a review committee in last year's recompetition despite having been what its cooperative group affiliate considered one of its better producers (**The Cancer Letter**, Feb. 19) has won its appeal to NIH. The appeals board ordered NCI to rereview the CCOP; it will be scheduled in early April, in time for any funding decision to be presented to the National Cancer Advisory Board at its May meeting. The issue in the appeals was whether there was any basis for disapproval. Even if the CCOP had not been given a priority score in the funding range, the PI intended to continue in the program by going to the community for support as an "NCI approved CCOP." Disapproval made that an unlikely alternative. If the CCOP is approved in the rereview, the ad hoc committee will have to assign a priority score. Should that be under the 228 payline which was the cutoff point, the CCOP could even wind up being funded. . . . **PATRICIA (TRISH)** Greene, who has been the American Cancer Society's national nursing consultant, has been named vice president for nursing by the Society's Board of Directors. Greene has been with ACS since 1981 and intends to be among the staff members who move to Atlanta when the Society's headquarters is relocated there this year. Arthur Holleb, senior vice president for medical affairs, said Greene's appointment recognizes both her accomplishments and contributions and the increasing and significant role nurses play in all programs of the Society . . . . **ONE MILLION** dollar gift from W.A. and Deborah Moncrief of Fort Worth has been used to endow two chairs at M.D. Anderson Hospital & Tumor Institute. One, in thoracic oncology, honors Charles LeMaistre, president of the Univ. of Texas System Cancer Center/MDA; the other, in diagnostic radiology, honors Robert Moreton, vice president emeritus. . . . . **GEZA JAKO**, outgoing member of the NCAB, will be the guest of honor at the annual meeting of the American Laryngological Society.

President's Budget Asks $1.59 Billion For NCI; Grants Get 11.6% Increase

(Continued from page 1)
increase of 8.5 percent over the current year's spending level, a raise of about $125 million.

The increase, which should exceed inflation if that is kept under control this year, is a departure from recent Administration budget requests for the National Cancer Program. White House budgets have rarely asked for more than four or five percent increases, and some, in the Carter and Nixon era, tried to impose cuts.

Also in the past, NCI could count on Congress to beef up the appropriations over the Administration requests, and that could happen this year, at least to a limited extent. It is not as likely to happen now, however. The 1989 budget presented last year is part of the two year compromise worked out as a deficit reduction measure last fall, when the stock market fall panicked the President and Congress into taking some action they felt would strengthen the economy. Congress can do some redistribution of the money allocated to domestic programs but it can't add to the total.

Another welcome departure from recent Reagan budgets for NIH: no funny games with the figures.

The "forward funding" schemes the Office of Management & Budget cooked up to disguise major budget reductions were not revived in the 1989 package, at least not as far as could be determined in the budget documents released last week.

So far, there has been no apparent language committing the White House to drop its noxious "apportionment" policy which greatly restricts flexibility in use of their money by NIH institutes. Look for legislation to correct that abuse, if OMB doesn't comply voluntarily with the repeated congressional requests.

On the negative side, there still is no money in the budget for construction. That's not new--the Reagan budgets, and many of those before him, have consistently omitted construction funds. The difference this last year (for FY 1988) is that Congress went along, pending a study that who knows when will be completed.

The White House is still trying to give control of NIH AIDS funds to the assistant secretary for health. The budget requests asks that the total amount go directly to ASH, along with all other AIDS funds in the Dept. of Health & Human Services. OMB made the same request last year; the House went along, but the Senate insisted on making the appropriations directly to the institutes.

NCI's total in the new budget, including AIDS money, is $1.594 billion.

In the current, 1988, fiscal year which ends Sept. 30, the total is $1.469 billion, including $89.9 million for AIDS. NCI's AIDS money jumps 39.3 percent in the new budget, to $125.3 million.

Research project grants (RO1s, PO1s), which took somewhat of a beating in the 1988 budget, received an 11.6 percent increase in the President's request, going from $661.9 million in 1988 to $738.5 million in 1989. That should be enough to permit funding of about 34 percent of approved competing grants, at priority scores in the low 150s. That would be slightly under the current numbers (the priority scores may not be as important now with NIH switching to percentile funding this year).

Grants still will not be funded at their full recommended levels. NCI expects that type 5 (noncompeting renewal) grants will get about 7 percent less than recommended, and competing grants 13 percent less.

Cancer centers, which did relatively well in the final 1988 appropriations, with an increase of more than 5 percent, got only a 1 percent increase in the President's new budget--$1 million over the $100.6 million in 1988. That also will probably require reductions from recommended levels. What it will do to the prospect of funding the recompeting and new core grants remains to be seen. NCI was able to award one new center core grant with FY 1988 funds, and at least two more are waiting in the wings.

Even a 1 percent increase is better than a zero increase, and that is what the clinical cooperative groups got in the President's budget. The group total remains exactly at the 1988 level, $58 million. That will further tighten competition among the groups, which are already under increasing pressure from NCI to step up patient accrual. One or more groups could be dropped, and all most certainly will get less than peer review approved.

Cancer control, which everyone, including Congress, says is where the action should be when they talk about applying the fruits of research in cancer prevention, detection and

treatment, once again found that "everyone" doesn't always put its money where its mouth is. The control budget went up less than $2 million, from $69.8 million to $71.3 million. Again, no new initiatives unless they are funded by the termination of old ones. Also, the Community Clinical Oncology Program, with built in increases in the third year of CCOP 2, probably will gobble up all the extra money and then some.

Other elements of the budget include:

National Research Service Awards, $32.4 million, compared with $31.7 million in 1988; intramural research, $235.2 million, compared with $229.7 million; research management and support, $65.5 million, compared with $64 million; and research and development contracts, $145.4 million, compared with $143.4 million.

That figure for R&D contracts, and all others listed by mechanism, do not include any of the $125 million AIDS money. Most of NCI's AIDS budget will go into the contract line, primarily drug development. Some intramural research, and possibly a few grants, may be funded out of the AIDS budget. But the National Institute of Allergy & Infectious Diseases, which has the lion's share of NIH AIDS money, gets most of the AIDS related grants.

NIAID's AIDS budget is $310.3 million; the National Heart, Lung & Blood Institute is third behind NCI, with $39 million; the Div. of Research Resources has $38 million; National Institute of Child Health & Human Development, $20.4 million; and the rest scattered among the other institutes. The total for NIH in the new budget is $587.6 million.

If Congress adds anything to the NIH budget, it probably will be for AIDS research.

The total NIH budget for the first time exceeds $7 billion in the figures submitted by the President.

The current budget, for FY 1988, is $6.667 billion, including $467.8 million for AIDS. NCI's is still the largest institute budget, with NHLBI second at $1.015 billion, up from $940.8 million (not including AIDS).

The others are, with the 1988 figures in parentheses, also not including AIDS:

Dental, $127.1 million ($123.1 million); Diabetes, $562.3 million ($531.4 million); Neurology, $557.6 million ($522.5 million); Allergy, $435.1 million ($415.1 million); General Medical, $676.7 million ($630.3 million); Child Health, $398 million ($382.5 million); Eye, $229 million ($221.1 million); Environmental Health, $218.9 million ($211.8 million); Aging, $204.8 million ($194.4 million); Arthritis, $158.2 million ($147 million); Research Resources, $320 million ($317.7 million); Nursing Research, $24.4 million (22.9 million); Fogarty Center, $11.3 million ($11.2 million); Library of Medicine, $70.6 million ($67.9 million); Director, $52.4 million ($51.2 million); Buildings & Facilities, $5 million ($28.7 million).

DCT Board Approves Concept Of New Natural Product Discovery Groups

The National Cooperative Drug Discovery Groups concept initiated four years ago has been so successful that the Developmental Therapeutics Program of NCI's Div. of Cancer Treatment has decided to expand it further.

The division's Board of Scientific Counselors gave concept approval last week to a new RFA calling for proposals to establish National Cooperative Drug Discovery Groups for natural products.

Approval was contingent on a favorable review of the program at the Board's meeting in June, when progress and accomplishments of the existing groups will be presented. The new RFA will not be released until after that review.

The concept called for $3 million to be set aside for first year funding of the natural products groups.

The cooperative drug discovery group program was initiated on the recommendation of Alan Sartorelli, who was a member of the DCT Board at that time. Four groups were funded from the first RFA and three more from the second. A third RFA has generated 30 applications which are undergoing review now.

The first four groups are mechanistically oriented, the additional three disease oriented, as are those now being reviewed. The natural products groups will be the third category of anticancer drug discovery groups.

DTP also initiated an RFA for discovery of new agents active against AIDS. Five awards were made, and that program subsequently was transferred to the National Institute of Allergy & Infectious Diseases. Since then, NIAID has funded additional drug discovery groups. NCI's DTP has retained the contract supported anti-AIDS drug screening effort.

DTP proposed that $3 million be set aside for first year funding of the natural

products groups. That would support five or six groups, if the average funding of the existing groups can be a guide, $500-600,000 a year. DTP's description of the concept as presented to the Board:

"In recent years, the DTP drug discovery program has been restructured to effect an appropriate balance between rational approaches to the elucidation of improved therapies and empirical screening. Progress in attaining this balance has been realized by targeting the screening program towards identification of agents with highly selective activity against a spectrum of cultured human tumor cells and by the concomitant establishment of a National Cooperative Drug Discovery Group program designed to exploit exciting fundamental findings and translate them rapidly into improved drugs and treatment strategies.

"In the NCDDG program, multidisciplinary and multi-institutional teams of talented scientists from academic, nonprofit research and/or commercial organizations are brought together in a concerted way to conceive, create and evaluate new therapies. Scientific approaches are broad and reflect the creativity and capabilities of group participants. Group objectives and approaches are investigator originated. The assembly of laboratory programs with diverse but highly interdependent tasks ranging from design and creation of new therapies to their evaluation in pertinent preclinical models fosters the realization of group goals.

"Groups are funded via cooperative agreements, a mechanism that retains the decision making prerogatives of the principal investigator and laboratory program leaders but also permits the active participation of NCI as a partner in group activities. Participation by NCI through an NCI coordinator selected from the extramural staff has been a particularly useful feature of the program, because in this way the extensive NCI contract facilities and data bases can be made available on a selective basis. The opportunity for close interaction of academic and nonprofit research with industry and government may be expected to facilitate subsequent development and marketing of new therapies.

"DTP is proposing to extend further the approach to discovery of improved treatments by establishing National Cooperative Natural Products Drug Discovery Groups--multidisciplinary teams of talented scientists who will, under a single PI, determine group objectives and scientific approaches according to their own perceptions of how best to discover anticancer therapies from the universe of natural substances, historically a fruitful source of agents effective against a wide variety of human diseases.

"Each group is envisioned as containing a number of laboratory programs whose cooperative activities may, for example, include (1) implementation of strategies to support the selection and acquisition of natural sources of novel agents; (2) preparation of crude materials for testing; (3) development and use of discriminating laboratory tests to select crude materials for further study; (4) development and use of biological assays and chemistry programs leading to the efficient isolation, purification and structure elucidation of antitumor selective moieties; and (5) suitable preclinical models for quantitating antitumor efficacy. Projects designed to produce analogs or derivatives of known natural products will not be responsive to this RFA.

"A cohesive National Cooperative Natural Products Drug Discovery Group should include all of the laboratory programs needed to attain group objectives. Since it is unlikely that all of the required laboratory capabilities will be found in any single institution, it is probable that most proposed groups will be multi-institutional as well as multidisciplinary in nature. The extent of NCI participation in group activities will be described in the terms of award of the RFA. This participation could appropriately include provisions for scale up of active materials, screening in laboratory models not used by the group and which may be available under contract to NCI, large scale isolation (e.g., under master agreements), and other activities appropriate to the defined partnership arrangement. Group members will meet periodically to review progress and establish short and long range goals, and the NCI coordinator will be a full participant in these meetings.

"Objectives of the natural products groups are to identify and isolate novel anticancer leads from natural sources, to carry out the preclinical tasks required, and to provide the basis for identifying and setting priorities on new agents and strategies for development to clinical trial. Preclinical drug development activities (e.g., INDA directed toxicology and formulation development) are regarded as outside the scope of

the discovery program. Preclinical development beyond the discovery stage by the private sector is encouraged. Alternatively, groups may recommend to the appropriate NCI decision groups new agents for NCI sponsored development."

DTP Director Michael Boyd said that natural products such as those in rain forests and marine environments "carry on biological warfare against each other. The intense competition for space and light has caused them to evolve a great diversity of molecular structures." Fungi also offer diverse structures with great potential for biological activity.

"We can be reasonably optimistic that in two, three or four years we stand the likelihood of having a good number of biological agents, some with the potential for antiviral activity," Boyd said.

Board members Susan Horwitz and Rodney Withers expressed concern about approving the new program before the June review. Board Chairman John Niederhuber asked if a decision could be delayed until then, but DCT Director Bruce Chabner said that if the Board approved the concept now, the RFA would not be issued until after the June meeting. "If you change your mind then, we can hold it up."

The first agent to go into clinical trials from the drug discovery groups is a monoclonal antibody developed by John Mendelsohn's group at Memorial Sloan-Kettering.

That is one of the four mechanistically oriented groups, focusing on monoclonal antibodies directed toward receptor sites. The antibody just entering phase 1 studies is directed against receptors for epidermal growth factor and is conjugated with indium-111. Mendelsohn and his colleagues believe it will be effective against squamous carcinoma of the lung.

John Venditti, who was chief of the Drug Evaluation Branch in DTP and program director for the drug discovery groups before he retired last year, has been retained as a part time consultant to continue working with the groups. He is continuing his position with MicroBiotest Inc., which he joined after leaving NCI.

Venditti told the Board that at least two more agents developed in the groups are ready for clinical trials, one a synthetic drug and the other a natural product.

The other three mechanistically oriented groups are the polyamine group headquartered at Roswell Park Memorial Institute, with Carl Porter as PI; the group at the Univ. of Florida (Gainesville), headed by Warren Ross, which is looking at inhibitors for topoisomerases I and II; and the group at the Univ. of California (San Francisco), headed by Victor Levin, which is focusing on inhibitors of tyrosine protein kinases.

Bristol-Myers is affiliated with Levin's group and SmithKline with Ross'. Mendelsohn's group works with industry on a case by case basis. Merrill Dow had been a member of Porter's group but dropped out.

The three disease oriented groups are just getting under way, with their awards being made last September. Those groups are headed by Michael Johnston at the Univ. of Colorado; Michael Brattain, Baylor College of Medicine; and Thomas Corgett, Wayne State Univ. The Colorado group, which is looking for agents against lung cancer, has no industry member; Brattain and Corbett, who are both focusing on colon cancer agents, have Bristol-Myers and Upjohn as members, respectively.

Funding of the seven groups totals about $4 million a year. Six million dollars was allocated for first year funding of awards for the second round of disease oriented groups, which will come from the 30 now being reviewed. At the average of $500-600,000 per group, that could support up to 12 groups, provided that many do well enough in the review, although variations including cost sharing by industry members make it difficult to anticipate costs in advance.

John (Tony) Mead, deputy director of DTP, is program director for the groups. Mary Wolpert and George Johnson are program coordinators, along with Carl Pinsky from the Biological Response Modifiers Program.

Other concepts approved by the Board last week follow:

Establishment and characterization of human and prostate cancer cell lines for use in antitumor drug screening. Multiple contract awards are anticipated for each of the two cell lines, with an estimated $300,000 a year total cost for each; contract period of three years.

The Developmental Therapeutics Program has undertaken development of an antitumor drug screening model based on the use of disease oriented panels of human tumor cell lines. The availability of well characterized cell lines derived from lung, colon, ovarian carcinoma, melanoma and central nervous system tumors has greatly facilitated this effort. Cell lines for establishment of in vitro screening panels representative of these disease types have been obtained from a large number of independent investigators and for the most part have been produced under NCI grant support or by intramural investigators. Development of a screening panel representative of breast cancer has been severely hampered by the lack of availability of

suitable cell lines. This situation was discussed with leading national and international researchers at a recent DTP sponsored workshop (the transcript is available on request); the consensus was that additional breast and prostate cell lines are needed.

The contractors will obtain biopsy or surgical specimens, together with appropriate clinical and pathological documentation, and establish and characterize tumor cell lines. Characterization will include demonstration that the cell line is free of contamination with adventitious agents, is of human origin, is tumorigenic in athymic mice, and retains features of the tumor of origin. In addition, the contractors will evaluate the relative suitability of candidate cell lines with respect to assay methodology in use for primary screening and make recommendations for selection of cell lines for use in the breast and prostate cancer cell line panels. In order to allow simultaneous implementation of diverse approaches to establishment of breast and prostate carcinoma cell lines, it is anticipated that multiple contract awards will be made.

The $300,000 annual cost estimate for each of the cell lines "is purely a guess," Boyd said. "We will probably need two or three good labs involved (in each), with a lot of expertise."

Boyd said that the feasibility has been established. "We can test with individual tumor cell lines." The program has "a fairly good selection" of lung and colon cancer cell lines, and some in melanoma and kidney cancer, but none in breast or prostate cancer.

"We expect to tell the contractors to provide 20 cell lines that meet our criteria," Boyd continued. "We hope out of that to get 10 or more that are suitable."

Answering Board member Rodney Withers' question on whether radiation sensitive cells would be included, Boyd said they would.

Primary rodent production centers. Recompetition of contracts now held by Charles River Laboratories, Harlan Sprague Dawley and Simonsen Laboratories. Estimated total cost of the new awards is $3.8 million a year, for awards of three years.

These contractors produce the laboratory animals needed to support NCI, other NIH and extramural investigators, including contractors, grantees and cooperative agreement holders. The animals are supplied on a reimbursement basis, and all but about $800,000 will be recouped by NCI, Chabner said.

These rodent production contracts have served as the base for DCT's total animal production program. It is within the scope of the contract that the isolator maintained foundation colonies are housed as well as the pedigreed expansion colonies. These primary rodent production centers raise animals in a maximum barrier environment. There has been an increase in the demand for nude mice. DCT's contracts to raise hybrid mice have been terminated so these primary rodent production centers were restructured to produce a large percentage of the needed hybrids and to meet the demand for additional nude mice. As a result, the Biological Testing Branch can supply a greater percentage of pathogen free animals.

The renewal date is expected to be effective June 1, 1989.

"These are very high prices," Board member Susan Horwitz commented. "These people (the contractors) must be making a fortune." She agreed with Board member Ralph Reisfeld that the animals the three contractors have been supplying are of good quality but added, "they must be making tremendous profits."

Joseph Mayo, chief of DTP's Animal Genetics & Production Branch, said the animals "would cost a lot more to purchase directly" from industry, rather than through the contracts.

Master agreement for chemical synthesis. Recompetition of master agreements now held by several organizations, for compound synthesis as the need arises (task orders). Master agreement holders are eligible to compete for the individual task orders. Estimated total cost of the task orders is $450,000 a year; master agreements will be awarded for three years.

The objective of the task order synthesis contracts is the resynthesis of a variety of compounds, unobtainable from the original sources, for evaluation as potential anticancer agents and anti-AIDS agents in the primary screens. These contracts will synthesize compounds, selected on the basis of biological and/or chemical rationale, in quantities of 0.1 to 2 grams using the original synthetic methods.

Task order synthesis contracts have provided about 250 compounds for screening in a flexible, timely and cost effective manner during each contract year.

Approximately 200 compounds will be synthesized per year under the new task orders for primary screens.

Development of dosage forms and delivery systems for new antitumor agents. Recompetition of a contract now held by the Univ. of Kansas. Estimated annual cost of the new contract (or contracts) is $360,000; three year awards.

New compounds are frequently encountered that do not inherently possess adequate solubility and stability for intravenous injection. For a number of years, the program has supported a contract effort to specifically resolve difficulties presented by these compounds. Due to the complexity of these problems, the studies are of longer duration than routine formulation projects. Approaches to significantly improve solubility are needed, and the offerors are requested to describe their approaches to improve drug solubility and stability that may be applicable to antitumor drugs. In the past, this effort was funded at a total fo six to eight staff years annually in the form of two or three contracts. Currently, the effort is supported by a single five staff year award to the Univ. of Kansas.

During the current contract, the Univ. of Kansas completed formulation development studies on fetindomide (prodrug of mitindomide), ebifuramin, rhizoxin, and dideoxyadenosine. In addition, water soluble prodrugs of rapamycin and taxol have been prepared and are undergoing biological evaluation. Formulations of several other compounds are under development.

The new project will basically be a continuation of the current workscope at a total annual effort of five or six staff years. However, multiple awards are anticipated and offerors will be asked to respond at both two and three staff year annual levels of effort. The estimate reflects a five percent increase over FY 1988 funding, plus an additional staff year of effort.

Development and production of pharmaceutical dosage forms. Recompetition of a contract held by the Univ. of Iowa. Estimated annual cost of the new contract, $500,000; three year award.

The primary objective of this contract is to develop pharmaceutically acceptable dosage forms of new agents assigned by NCI and to manufacturer these formulations in batch sizes adequate for phase 1 and phase 2 clinical trial. This initiative combines a contract workscope that has been operational since the mid-1970s; development and production of dosage forms, with one exclusively devoted to solid oral dosage forms. The workload of the latter over the past few

years appears not to justify a separate contract.

Based on past experience, most dosage forms will be sterile freeze dried formulations. However, the contractor will also likely manufacture sterile injections, sterile infusion fluids, tablets, and capsules. The ability to have a contract resource to develop and produce a wide variety of pharmaceutical dosage forms has been very useful in meeting the changing needs of NCI's drug development effort.

During the current contract, the Univ. of Iowa has completed development work on a number of compounds, including sodium N-nitroso pyrazinamine, dideoxycytidine, inosine, and uridine. Development work is in progress on four other projects. About 11 batches have been manufactured annually. Nearly all have been sterile products and include both freeze dried and infusion dosage forms.

As with the current effort, the contractor will have the option of subcontracting the solid oral dosage form aspects.

Partial support of the Institute of Laboratory Animal Resources.This will be a noncompetitive renewal of the contract with the National Academy of Sciences, effective starting Oct. 1, 1989, for a five year period. Estimated annual cost, 444,500.

NCI Advisory Group, Other Cancer Meetings For March, April, Future

President's Cancer Panel--March 1, Columbia Univ, Jules & Armand Hammer Health Sciences Ceter Auditorium 401, 9 a.m.-1 p.m., open.

Cancer Research Manpower Review Committee--March 2-4, Red Lion Hotel, Salt Lake City. Open March 2 8-8:30 p.m.

Adjuvant Therapy of Breast Cancer--March 3-5, St. Gallen, Switzerland. Contact Secretariat Prof. H.J. Senn, MD, Dept. of Medicine C, Oncology Center, Kantonsspital, CH-9007 St. Gallen, Switzerland.

Pain and Symptom Management in the Terminally Ill--March 3-5, San Francisco. Contact Dr. Richard Williams, Hospice Care Inc., 5740 Prospect, #2004, Dallas, TX 75206, phone 214/823-2891.

Advances in Hematologic Malignancies--March 5-12, Snowbird, UT. 6th winter symposium. Contact Mary Humphrey, Conference Coordinator, Arizona Cancer Center, Tucscon 85724, phone 602/626-2276.

Bone Marrow Transplantation: Current Controversies --March 6-12, Tamarron, CO. Contact UCLA Symposia, 103 Moleculare Biology Institute, UCLA, Los Angeles 90025.

Israel Cancer Research Fund Scientific Conference --March 6-10, Tiberias. Contact Greta Kweller, ICRF, 29 Hamered St., Tel Aviv 68125, Israel; or Roberta Rothman, Israel Cancer Research Fund, 1290 Ave. of the Americas, Rm 270, New York 10104, phone 212/969-9800.

World Congress III on Cancers of the Skin--March 7-9, Houston. Contact Office of Conference Services, HMB 131, M.D. Anderson Hospital, 1515 Holcombe Blvd, Houston 77030, phone 713/792-2222.

UICC Advanced Medical Oncology Course--March 7-9, St. Gallen. Contact Prof. H.J. Senn, Div. of Oncology, Med Klinic C. Kantonsspital, 9007 St. Gallen, Switzerland.

UICC Advanced Postgraduate Medical Oncology Course --March 7-11, Mexico. Contact Senn, address above.

Educational Program for Professional Nurses--March 9-10, Altoon, PA; March 17-18, Beaver County, PA; March 28-29, Greensburg, PA. Contact Frances Barg, Community Cancer Care, VNA of Allegheny County, 815 Union Pl., Pittsburgh 15212, phone 412/231-6080.

Artificial Intelligence Systems as Diagnostic Consultants for the Cytologic and Histologic Diagnosis of Cancer--March 13-15, Chicago. 2nd international conference. Contact International Academy of Cytology, 5841 Maryland Ave., H.M. 449, Chicago, IL 60637.

American Society of Preventive Oncology--March 14-15, Hyatt Hotel, Bethesda. Annual meeting. Contact Richard Love, MD, MS, ASPO, 1300 University Ave.-7C, Madison, WI 53706, phone 608/263-6919.

International Symposium on Benzene Metabolism, Toxicity and Carcinogenesis--March 14-16, National Institute of Environmental Health Sciences, Research Triangle Park, NC. Contact Prof. Robert Snyder, Director, Joint Graduate Program in Toxicology, Rutgers College of Pharmacy, Piscataway, NJ 08855, phone 201/932-3720.

Advances in Cancer Control VI--March 16, J.W. Marriott Hotel, Washington DC. Jointly sponsored by American Society of Preventive Oncology, Assn. of Community Cancer Centers, Assn. of Community Cancer Centers. The morning session will focus on innovative approaches to cancer prevention control research, the afternoon on cancer control research evaluation.

Clinical Indicators: Striving for Excellence and the Joint Commission Mandate--March 16-19, J.W. Marriott Hotel, Washington DC. 14th national meeting of the Assn. of Community Cancer Centers. Contact ACCC Executive Office, 11600 Nebel St. Suite 201, Rockville, MD 20852, phone 301/984-9496.

Drug Treatment of Cancer Pain in a Drug Oriented Society: Adequate or Inadequate?--March 16-18, Houston. Contact Office of Conference Services, HMB Box 131, M.D. Anderson Hospital & Tumor Institute, 1515 Holcombe Blvd, Houston 77030, phone 713/792-2222.

Leukemia: Molelcular Alterations and Cellular Proliferation--March 16-19, Hotel Inter-Continental, New Orleans. fourth national symposium. Contact Louise Toglia, Leukemia Society of American, 733 Third Ave., New York 10017, phone 212/573-8484.

Chemotherapy of Cancer and Cancer Nursing--March 19-24, Cairo. Contact Prof. S. El-Haddad, Kasr El-Aini Centre of Radiation Oncology and Nuclear Medicine, Faculty of Medicine, Cairo Univ., Cairo, Egypt.

British Assn. for Cancer Research--March 21-24, Norwich. 29th annual meeting. Contact B. Cavilla, Institute of Biology, 20 Queensbury Place, London SW7 2DZ, UK.

Acrylonitrile Liaison Group--March 21, NIH Bldg 31 Rm 9, 10 a.m.-noon, open.

Caring for the Advanced Cancer Patient at Home: Strategies for Community Health Nurses--March 23-24, Calvary Hospital, Bronx. Contact Sr. Patricia Sheridan, Calvary Hospital, 212/430-9393 Ext. 2259.

Technological Advances in Cancer Nursing--March 23, Columbia Univ. Comprehensive Cancer Center. Contact Penny Ashwanden, 212/305-6905.

AIDS: Defining the Progress--March 24-26, Hilton Hotel, Daytona Beach, FL. Fifth annual oncology conference sponsored by Halifax Medical Center and the Regional Oncology Center, Herbert Kerman, director. Contact Educational Services, PO Box 1990, Daytona Beach 32015.

Molecular Biology of T Cell Differentiation and Function--March 24-25, Chapel Hill. 12th annual symposium of the Lineberger Cancer Research Center. Contact the center, Univ. of North Carolina, School of Medicine, Chapel Hill, NC 27514.

EORTC GI Tract Cancer Meeting--March 25-26, Lucerne. Contact Dr. U. Metzger, Oberaarzi, Dept. Chirurgie, Universitatsspital, 8091 Zurich, Switzerland.

Clinical Cancer Program Project Review Committee--March 25, Ramada Renaissance Hotel, Washington DC. Open 8-8:30 a.m.

Molecular Biology of Plant-Pathogen Interactions--March 26-April 1, Steamboat Springs, CO. Contact Jacqueline Wester, Molecular Biology Institute, UCLA, Los Angeles 90024, phone 213/206-6292.

Cancer Clinical Investigation Review Committee--March 28-29, Hyatt Regency, Bethesda. Open March 28 8:30-9 a.m.

Cancer Therapeutics Program Project Review Committee--March 28-30, Holiday Inn Crowne Plaza, Rockville, MD, open 8:30-9 a.m.

Care of the Patient with Cancer--March 29-31, London. Contact Institute of Oncology, Marie Curie Memorial Foundation, 28 Belgrave Square, London SW1X 8QG, UK.

National Council on Radiation Protection and Measurements--March 30-31, Washington DC, 24th annual meeting. Contact the Council, 7910 Woodmont Ave., Suite 1016, Bethesda, MD 20814, phone 301/657-2652.

Cancer Preclinical Program Project Review Committee--March 31, NIH Bldg 31 Rm 9, open 8:30-8:45 a.m.

Fundamental Tumor Registry Operations--April 6-8, Princeton, NJ. Contact New Jersey State Cancer Registry, Betsy Kohler, Local Coordinator, 609/588-3500.

Infusional Chemotherapy Symposium--April 7-8, Boston. Contact Barbara McConnell, Cancer Center, 125 Parker Hill Ave., Boston 02120, phone 617/739-6605.

Immunology and Cancer--April 8, Memphis. Preseneted by the Dorothy Snider Foundation Forum on Cancer and the Univ. of Tennessee (Memphis). Contact Dr. James Hamner, Forum Director, Univ. of Tennessee, 62 S. Dunlap, Memphis 38163, phone 901/528-6354.

Resistance to Antitumor Agents in Laboratory and Clinic: Problems and Implications--April 13-18, Erice, Italy. Contact Dr. C. Flandina, Istituto di Farmacologia, Policlinica P. Giaccone, 90127, Palermo, Italy.

Provocative Topics in Gynecologic Oncology--April 14-16, Harbor Court Hotel, Baltimore. The J. Donald Woodruff Symposium 1988. Contact Francette Boling, Program Coordinator, Johns Hopkins Medical Institutions, Office of Continuing Education, 720 Rutland Ave., Turner 22, Baltimore, MD 21205, phone 301/955-6085.

Biologic Response Modifiers--April 15-16, Lexington, KY. First Markey Cancer Center Symposium. Contact Karen Christian, 606/257-4500.

Recent Advances in Nonmelanoma Skin Cancer--April 16, Cleveland. Contact Barbara Guy, PhD, R. Livingston Ireland Cancer Center, 2074 Abington Rd, Cleveland 44106.

American Radium Society--April 16-20, Four Seasons Hotel, Seattle. 70th annual meeting. Contact Suzanne Bohn, American Radium Society, 1101 Market St., 14th Floor, Philadelphia 19107, phone 215/574-3179.

Radiation Research Society and North American Hyperthermia Group--April 16-21, Franklin Plaza Hotel, Philadelphia. 36th annual meeting of RRS, 8th annual meeting of NAHG. Contact Radiation Research Society, 1101 Market St., 14th floor, Philadelphia 19107, phone 215/574-3153.

Interleukin-2: Clinical and Biological Update--April 20, Hilleboe Auditorium, Roswell Park Memorial Institute, Buffalo. Contact Gayle Bersani RN, Coordinator of Continuing Education Programs, RPMI, Buffalo, NY 14263, phone 716/845-2339.

Cancer in the Very Young--April 21-22, Houston. 13th Annual Mental Health Conference sponsored by the Dept. of Pediatrics, M.D. Anderson Hospital & Tumor Institute. Contact Office of Conference Services, HMB Box 131, MDA, 1515 Holcombe Blvd., Houston 77030, phone 713/792-2222.

National Workshop for Clinical Oncologists--April 22-23, Keystone, CO. Diagnostic imaging techniques including MRI, CT and ultrasound, for use by clinical oncologists in management of cancer. Contact UCLA Symposia, Molecular Biology Institute #103, UCLA, Los Angeles 90024, phone 213/206-6292.

Mechanisms of Action and Therapeutic Applications of Biologicals in Cancer and Immune Deficiency Disorders--April 23-30, Keystone, CO. Contact UCLA Symposia, address above.

Human Tumor Antigens and Specific Tumor Therapy--April 23-20, Keystone, CO. Contact UCLA Symposia, address above.

Cancer Progress III, Executive Conference--April 25-26, Sheraton Centre, New York. For executives in the pharmaceutical and diagnostic industries and the investment community. Twenty scientists and business executives will discuss latest developments in drug and diagnostic research. Contact Communitech Market Intelligence, PO Box 67, Yorktown Heights, NY 10598, phone 914/245-7764.

29th Annual Postgraduate Institute for Pathologists in Clinical Pathology--April 25-May 6, Baltimore. Contact Dr. John Frost, 604 Pathology Bldg, Johns Hopkins Hospital, Baltimore 21205.

Expanding Role of Folates and Fluoropyrimidines in Cancer Chemotherapy--April 28-29, Buffalo. International Symposium. Contact Gayle Bersani, Coordinator of Continuing Education Programs, Roswell Park Memorial Institute, Buffalo 14263, phone 716/845-2339.

FUTURE MEETINGS

Symposium on Indoor Air--May 5, Sheraton Imperial Hotel, Research Triangle Park, NC. Sponsored by the Genotoxicity & Environmental Mutagen Society. Contact Dr. Larry Claxton, EPA, Research Triangle Park 27711, phone 919/541-2329, or Thomas Hughes, RTI, RTP 27709, phone 919/541-6148.

Trimetrexate Symposium--June 6-7, Univ. of Vermont, Burlington. Summary of research on the chemistry, biochemistry and pharmacology of tremetrexate. Contact Dr. John McCormack, 301/496-3597.

AIDS: Essential Issues and Practical Approaches--June 29, Alta Bates Hospital Auditorium, Berkeley, CA. Contact Mary Grim, Medical Education Coordinator, 415/540-1420.

Transrectal Ultrasound in the Diagnosis and Management of Prostate Cancer--Sept. 23-24, Chicago. Third International Symposium. Contact Diversified Conference Management, PO Box 2508, Ann Arbor, MI 48106, phone 313/665-2535.

Development and Differentiation: Modern Approaches to Classical Problems--Oct. 11-14, Westin Galleria Hotel, Houston. 41st Annual Symposium on Fundamental Cancer Research. Contact Office of Conference Services, M.D. Anderson, 1515 Holcombe Blvd., Houston 77030, phone 713/792-2222.

Innovative Cancer Chemotherapy for Tomorrow--Nov. 16-18, Sheraton Centre Hotel, New York. Chemotherapy Foundation Symposium VIII. Contact Jaclyn Silverman, Div. of Medical Oncology, Box 1178, Mount Sinai School of Medicine, One Gustavel L. Levy Pl., New York 10029, phone 212/241-6772.

Monoclonal Antibodies and Breast Cancer--Nov. 17-18, San Francisco. Third International Workshop. Contact Kelly Travers, John Muir Cancer & Aging Research Institute, 2055 N. Broadway, Walnut Creek, CA 94596, phone 415/943-6314.

11th Annual San Antonio Breast Cancer Symposium--Nov. 29-30. Abstracts of proffered papers on the experimental biology, etiology, prevention, diagnosis and therapy of breast cancer are invited. Abstract deadline is July 1. Contact Terri Coltman RN, 4450 Medical Dr., San Antonio, TX 78229.

The Cancer Letter _Editor Jerry D. Boyd Associate Editor Patricia Williams

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