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Neutron Therapy Contracts Wind Down Next Year; DCT To Consider Whether To Continue Support

It has been 10 years since the radiotherapy community sold NCI and the Div. of Cancer Treatment on supporting development of neutron therapy facilities and clinical trials in
(Continued to page 2)

In Brief

King ACCC President, Fleming President Elect; Wyngaarden Says He Doesn't Oppose Panel

DAVID KING, Good Samaritan Hospital, Phoenix, was elected president of the Assn. of Community Cancer Centers at the organization's annual meeting in Washington last week. He succeeds Robert Enck, Riverside Methodist Hospital, Columbus, OH. Irvin Fleming, Methodist Hospitals of Memphis, was named president elect. . . . ACCC AWARD for outstanding service to community cancer patients went to Gale Katterhagen and John Yarbrow as two of the ACCC's founders and their continuing efforts in support of it. Both are former ACCC presidents. . . . NIH DIRECTOR James Wyngaarden was misquoted in last week's issue regarding his view of the President's Cancer Panel. Wyngaarden said he is not opposed to continuation of the Panel but only objects to the practice of the NCI director in bringing his differences with NIH, which he interprets as "delays or blockage," to the Panel at public meetings. Wyngaarden also did not say that the Panel "has not achieved anything." He made that comment in reference to NCI's bypass budget. . . . FDA DOCUMENT titled "Points to Consider in Manufacture and Testing of Monoclonal Antibody Products" is available from the agency, which is requesting comments on it. For single copies, write to Legislative, Professional & Consumer Affairs Branch, FDA, 5800 Fishers Lane, Rockville, MD 20857. Send comments to Dockets Management Branch, FDA, Room 4-62, same address. . . . MONTEFIORE Medical Center, Bronx, was listed as an affiliate of the North Shore Univ. Hospital CCOP in The Cancer Letter Feb. 19. Peter Wiernik, chairman of the Dept. of Oncology at Montefiore, points out that only the Div. of Pediatric Hematology-Oncology is affiliated with the CCOP. The Dept. of Oncology is the clinical branch of the Albert Einstein Cancer Center. . . . BARUJ BENACERRAF, President of Dana-Farber Cancer Institute, will receive the 1988 Margaret Byrd Rawson Achievement Award given annually to dyslexics for outstanding accomplishment. Benacerraf won the Nobel Prize in 1980 for his work on immune response genes.

Spring Meetings

Will Concentrate

Everyone In New

Orleans—Except

The Nurses

. . . Page 4

Henry Neil, Natcher's

Right Arm, Back

On The Job

. . . Page 6

Hammer To Produce

US-USSR "Cancer

Summit" March 29

. . . Page 7

SOCMA Asks Congress

For Carcinogen

Classification Probe

. . . Page 7

NCI Advisory Group,

Other Cancer Meetings

. . . Page 7

DCT To Consider Fate Of Neutron Contracts, "Boron Neutron Capture"

(Continued from page 1)

dedicated hospital environments, to test its efficacy across a broad range of tumors. The program has been beset with problems, mostly due to equipment deficiencies. The three contracts remaining (of five originally awarded) are due to expire next year, and NCI has to decide what to do next.

Seven protocols for phase 3 randomized studies were developed with the Radiation Therapy Oncology Group. There has been one winner, for salivary gland cancer. Neutron therapy is now the treatment of choice for that disease. The protocol was closed two years ago, when the stunning success rate became obvious after only 32 patients were accrued.

The six others are still accruing patients, with completion dates stretched out to 1995 and possibly longer.

John Antoine, director of DCT's Radiation Research Program, presented an update of the status of neutron therapy trials at the recent meeting of the division's Board of Scientific Counselors:

"The current neutron therapy trials are funded by DCT through the contract mechanism and as of Sept. 27, 1987, these contracts supported four neutron therapy facilities: Univ. of Washington at Seattle; Univ. of California at Los Angeles; M.D. Anderson Hospital at Univ. of Texas Cancer Center, Houston; and Cleveland Clinic Foundation, in Cleveland.

"At the September review of the contracts by the Radiation Research Review Committee, it was recommended to discontinue Cleveland's contract because of failure to meet patient accrual goals. The remaining three contractors were meeting contract accrual and were recommended for continued funding, UCLA for six months and Univ. of Washington and MDAH each for one year.

[Ed. note: a contract with the Univ. of Pennsylvania had been terminated previously because of equipment failure].

"Cleveland Clinic has agreed to use unexpended funds to continue followup data management studies of patients treated with neutrons. MDAH suffered a major machine failure last fall, necessitating rewinding the two main magnets of the cyclotron. MDAH has already let the contract to carry out the

repairs and will continue neutron therapy trials when the machine is repaired in six to nine months. No funds will be paid to MDAH beyond the current funding period (March 1988) until the machine is back in operation.

"UCLA continues to improve in its accrual, but will probably fall short of the contractual requirements at the next review. Washington continues to treat a significant number of salivary gland patients in addition to its average accrual to protocol studies. The randomized salivary gland study was closed in 1986, with neutrons declared as the treatment of choice.

"All the neutron therapy clinical trials, with the possible exception of the lung study, will require additional years beyond 1989 to acquire sufficient patients for statistical significance. The head and neck protocol, for example, is a high priority to complete because of the decade old controversy between the Edinburgh and Hammersmith trials. At current accrual rates, this study will probably complete in 1990-1991, assuming a significant contribution from the Clatterbridge group at Liverpool, which has just recently joined the working group and has added two patients to the head and neck study. Similarly, the prostate study, which shows promise of providing an advantage over all other conventional treatments for this disease, will not be completed until 1992.

"All clinical trials groups in the U.S. report difficulties in accruing patients to protocol studies; the neutron therapy group is no exception. To maximize the return on contract dollars, therefore, the Radiation Research Program is proposing to continue the neutron studies on a per capita reimbursement mechanism, whereby each contractor would receive a fixed dollar amount for each patient placed on protocol, and no other funds, except for data management followup. The per patient figure would be based on each contractor's annual budget, divided by the total patients (150) currently required as contract deliverables. Each principal investigator of these contracts agrees to the concept. This would result in significant savings to NCI and still support the neutron therapy experiment until the important trials in prostate and head and neck are completed.

"There is a growing interest in the international community in these neutron therapy studies, particularly in the head and neck and prostate disease sites. Several facilities with neutron generators identical

**NEUTRON THERAPY PROTOCOL STUDIES (Phase III)
January 1, 1988**

Protocol	Site	Activated	Patients Accrued	No. Needed to Complete Study	Projected Date to Completion
RTOG 8001	Salivary Gland	July 1980	32	Closed	March 1986
RTOG 85-22	Head and Neck	April 1986	62	306	May 1993
RTOG 85-23	Prostate	April 1986	90	345	June 1992
RTOG 85-24	Lung	Sept 1986	92	200	January 1989
RTOG 86-09	Resistant Hist.	Feb. 1987	22	123	March 1991
RTOG 85-25*	Cervix	July 1986	26	183	August 1995
RTOG 86-11*	Rectal Ca	April 1987	<u>2</u>	106	No projection
TOTAL PHASE III (randomized studies)			326	GRAND TOTAL Protocol Patients to Neutron	
plus	TOTAL PHASE II (dose-searching)		484	Studies using new neutron generators = 810	

*Targeted to be closed in March 1988 if accrual does not improve

to that at the Univ. of Washington have expressed a desire to participate in the U.S. studies without NCI financial support. They include, in addition to the Clatterbridge group in England, facilities in Belgium, South Africa and Korea. An international workshop is planned for 1988 to assess the interest of this international participation."

The Univ. of Washington is so far ahead of the others because "it made the excellent decision to get its machine from Scanatronics (a European firm)," Antoine said. UCLA's difficulties can be attributed to the fact that the manufacturer of its machine went bankrupt before it was completed, and arrangements had to be made for others to finish it, considerably behind the original schedule. It seems to be working fine now.

"Our scientific position is to continue as originally planned, with possibly expanding the phase 3 studies into the international field," Antoine said.

"We're now whittled down to two functional machines," DCT Director Bruce Chabner said. "We'll have to make a decision whether to continue support (which is \$4 million a year). The crucial decision is whether to go beyond 1989. If so, the recompetition will have to be initiated this year. This is a

very serious problem. We're trying to prepare you (Board members) for the decision either to go on or call it quits."

Even if NCI does end its support next year, "that doesn't mean the end of neutron therapy," Chabner continued. "Those with the two functional machines could look for other support, from third party payors or grants."

Antoine noted that some of the contracts had originally been grants prior to the contract awards in 1979; they were converted to grants at that time.

"We're not getting our money's worth with the contracts," Chabner said. He added that DCT needs some "expert opinion" about the issue, and asked that a Board committee be established to help provide it.

When it was pointed out that the foreign investigators are not asking for any money but only to participate in the working groups, Chabner said, "Collaboration is fine, but I don't think we can accept data from Korea or South Africa, if we can't monitor it."

Board member James Cox, who is chairman of RTOG, noted that there were two major sources for the cyclotrons used in the new facilities. "One, at Washington, worked. One bombed, because the company went bankrupt. The track record was seriously hampered. Now

we're looking at stopping the trials after only two years. We could lose the opportunity to get some answers about neutron therapy, even though the machine problems may be solved."

Board member Rodney Withers, professor of radiation oncology at UCLA, said that accrual "is on a steady upward incline." Accrual had been slow at UCLA because of the requirement that all controls had to be treated there. "Now that has been loosened up. Controls can be treated outside if they are affiliated with UCLA."

Board Chairman John Niederhuber appointed Board member William Hendee chairman of the committee to study the issue and report at the June meeting. Other Board members will be asked to serve on the committee, along with some consultants.

"I think the trials are being done as well as they can be," Antoine said. "They are well designed trials."

"They are costly, but we don't want to end them without taking a thorough look at it," Chabner said. "On the other hand, we don't want to go on spending money uselessly."

Antoine said that third party reimbursement is being obtained with increasing success.

The Radiation Research Program is being confronted with another situation which could be viewed both as a major problem and an interesting opportunity.

The Dept. of Energy is preparing to close a facility in Idaho used for production of isotopes for the military. It is located 50 miles west of Idaho Falls, in a rather remote area.

DOE is willing to make it available to NCI for development of the process called "boron neutron capture therapy." Energy is willing to pay the costs of converting the facility to that use, if NCI picks up the costs thereafter.

DOE can afford to be generous, and perhaps NCI could get them to sweeten the offer a little. The conversion to cancer therapy would cost about \$10 million.

"It would cost them \$60 million to turn it back into sagebrush," DCT Deputy Director Gregory Curt said.

Boron neutron capture therapy involves depositing boron in or near the tumor. It emits alpha particles, attacking the adjacent tumor cells while sparing normal tissue outside the tumor. It has considerable

promise in treating brain tumors, and the Idaho facility is uniquely capable of producing the necessary materials.

The problem is one NCI and DOE have encountered before: patients have to be transported to a remote location to receive the therapy. Some NCI executives doubt they would have any more success in getting patients to go to Idaho than they have in similar situations.

"This is the third initiative by DOE into cancer treatment," Cox said, referring to Fermi Lab in Chicago and the facility at Los Alamos. "In each case it was the attempt to convert physics machines to cancer treatment. Each time NCI became involved. We're looking at curative therapy for people with no treatment available, at modest cost to NCI."

"We'll hear more of this in June," Niederhuber said. Chabner added that a full scientific presentation would be made in June, unless DOE withdraws its offer by then.

Two other areas in RRP's research interest were discussed by Antoine.

"We are working on on concepts (for research grants or contracts) in radiolabeled immunoconjugate dosimetry," Antoine said. "That problem plagued us in brachytherapy. We don't want to have that in immunological radiolabeled imaging and treatment."

Observing that hyperthermia is being more widely used, Antoine said that "temperature, dose and time factors are critical problems." RRP is planning a workshop to develop concepts for new research to deal with those problems.

Hendee suggested that two workshops be held, one for temperature and another for dose fractionation. "Those involve different people."

Everyone But The Nurses Will Gather In New Orleans--Even The Surgeons

Oncologists will take over New Orleans for a week in May, in what will probably be the biggest concentration of cancer clinical and basic scientists ever seen. Had it not been for the Equal Rights Amendment, it most certainly would have been even bigger.

The second and third largest organizations of cancer professionals, the American Society of Clinical Oncology and the American Assn. for Cancer Research, are meeting in tandem, as usual. The New Orleans Convention Center will be the scene, ASCO holding its 24th

annual meeting May 22-24, AACR its 79th May 25-28, with the traditional overlap May 25 for the Joint AACR/ASCO symposium.

This time, they will be joined by two smaller but no less important organizations, the Society of Surgical Oncology and Society of Head and Neck Surgery. Those will be meeting concurrently with ASCO, and cross attendance of their meetings will be permitted.

Thanks to ERA and the failure of the Louisiana legislature to vote for it, the largest oncologic society--Oncology Nursing Society--will meet a couple of weeks earlier and 900 miles away. The 11,000 member strong ONS will have its 13th Congress in Pittsburgh May 4-7.

ONS decided a few years ago that it would not meet in any state which had not ratified the Equal Rights Amendment. Until then, the nurses met during the week preceding ASCO/AACR, in the same city, which encouraged many nurses to stay on for some of the other sessions. But with the ERA rule applied, ONS went to Denver last year rather than Atlanta, where the others gathered, and the nurses are forsaking the pleasures of Bourbon Street this year.

The ONS Congress will open with what has become one of the many significant achievements of the organization, the Oncology Nursing Certification Examination. Several thousand have passed the exam, now a major milestone in the professional development of oncology nurses.

Congress speakers are:

Keynote address, Joan Kyes, "Professional Survival;" Mara Morgensen Flaherty Memorial Lecture, Marion Morra, "Choices: Who Tells the Patients What They Need to Know?" and ONS/Schering Clinical Lecture and Luncheon, Roberta Strohl, "The Nursing Role in Radiation Therapy: Symptom Management of Acute and Chronic Reactions."

Deborah Welch-McCaffrey is Congress chairperson; Deborah Mayer is ONS president.

ASCO will open May 22 with its popular educational programs and "Meet the Professor" sessions. A forum sponsored by the ASCO Clinical Practice Committee will tackle the subject, "Clinical Trials--What's in it for You and Your Practice?" Carl Pinsky, chief medical officer for NCI's Biological Response Modifiers Program, will preside, with other panel members Bruce Chabner, director of NCI's Div. of Cancer Treatment; Charles Coltman, chairman of the Southwest Oncology

Group and ASCO president elect; Gary Ratkin, chairman of the Clinical Practice Committee; and Robert Wittes, director of NCI's Cancer Therapy Evaluation Program.

ASCO President B.J. Kennedy will deliver the President's Address. The 19th annual David A. Karnofsky Memorial Lecture will be given by Robert Gallo, titled, "Virus' of Cancer and Immunodeficiency."

The AACR/ASCO joint symposium will be on the subject, "Drug Resistance from the Molecular Level to Clinical Management."

Clara Bloomfield is chairwoman of the Program Committee.

AACR will open with the Rosenthal Award Lecture, to be given by Frederick Li of NCI with the title, "Cancer Families: Human Models of Susceptibility to Neoplasia."

Paul Calabresi will chair the Scientific and Public Affairs Symposium on "Progress in Cancer Treatment." Other symposia are scheduled on "Cancer Prevention," chaired by Emmanuel Farber; "Growth Factors, Oncogenes and the Control of Proliferation," organized by Ronald Buick; "New Approaches to the Discovery of Anticancer Agents," chaired by Frederick Valeriote; and "Tumor Suppressor Genes--Mechanistic Aspects," the chairman to be announced.

New Technologies

Other AACR award lectures will be given by Isaiah Fidler, Clowes Award, on "Critical Factors in the Biology of Human Cancer Metastasis;" Webster Cavenee, Rhoads Lecture, on "Molecular Genetics of Familial Human Cancer;" and Norbert Brock, Cain Award, on "Oxazaphosphorine Cytostatics: Past-Present-Future."

AACR President Enrico Mihich's presidential address is titled, "Immunomodulation by Anticancer Agents."

Patrick Burns is chairman of the Program Committee, and Krishna Agrawal is chairman of the Local Arrangements Committee.

A new feature of the AACR meeting will be workshops on new scientific technologies, scheduled for Saturday afternoon, May 28. They are intended to give registrants an overview of important new laboratory techniques.

Both ASCO and AACR scientific sessions and commercial exhibits will be held in the New Orleans Convention Center.

The ASCO business meeting will be held Monday afternoon, May 23. The AACR business meeting is scheduled for Thursday afternoon, May 26.

Neil Back On The Job; "He Tells Me What To Do And I Do It," Natcher Says

Henry Neil did not attend the hearing last year on NCI and other NIH appropriations conducted by the House Labor-HHS-Education Appropriations Subcommittee. To those who have sat in on those hearings for the past decade or so, or who have had dealings with the subcommittee, it was like looking down the Mall and noticing that the Washington Monument was gone.

Neil, chief staff member for HHS appropriations for Subcommittee Chairman William Natcher, was home recovering from a stroke. He did recover, has been back on the job for several months, and was in his familiar position at Natcher's right arm for the hearing a couple of weeks ago on NCI's FY 1989 budget.

Natcher opened his remarks by noting Neil's presence and commenting on the "excellent treatment, patience and kindness" Neil had received, including "kindness and advice" from his friends at NIH.

"I'm glad to have him back," Natcher said. "He tells me what to do and I do it."

As is his custom, Natcher began by reminding NCI Director Vincent DeVita that the institute's budget has grown from about \$100 million in the late 1960s to its present \$1.6 billion. "What accomplishments can you point to, doctor? Some people say cancer is getting too much money. What can you say about your accomplishments?"

That question is intended to elicit a thick manuscript describing those accomplishments which is submitted for the record. DeVita's verbal response is limited to a few minutes. This time he referred to expectations when the National Cancer Act was passed. "If in 1971 you had asked scientists what the array of development (in basic science) we have seen since then would be worth to them, \$10 billion would have seemed small.

"We have the opportunity to impact on the lives of several hundred thousand people, if we can transfer this knowledge," DeVita continued. "Mortality is beginning to be impacted. We have the capability now of thoroughly understanding cancer. I think we have gone far beyond the expectations of the people who argued the case for the Cancer Act of 1971."

Natcher commented that he had had a discussion with Armand Hammer, chairman of the President's Cancer Panel, about Hammer's plan to raise an extra \$500 million for NCI

if the government will provide another \$500 million additional, over and above the \$1.6 billion requested by the White House for FY 1989.

DeVita said that when he and Hammer presented the Panel's annual report to President Reagan recently, the President was interested in the plan to raise funds from the private sector.

"Dr. Hammer looks at the bypass budget, \$2 billion, and he is trying to get the Cancer Institute up to that level," DeVita said. "He feels that advances are coming along so quickly that we have to be in a position to take advantage of them. Now, we have to take money from one good area to help in another good area, when something comes along."

DeVita added that Hammer has enlisted entertainer Bill Cosby in his fund raising efforts. "I have learned not to be against Dr. Hammer when it comes to raising money."

Natcher did not offer much encouragement that Congress would come up with its half of the billion dollars. "We have to look very carefully at the division of funds," he said. "The 1989 fiscal year will be a right difficult year. Education is important. For years, we have tried to get (the Administration) up to our figure for education. This year they've come in with a billion dollars over our figure. There's the \$1.3 billion for AIDS, and people are saying that it will be \$5 billion in three years."

Responding to a question about bladder cancer from Silvio Conte, the ranking subcommittee member from Massachusetts, DeVita mentioned the drug regimen developed by Alan Yagoda and his colleagues at Memorial Sloan-Kettering. The regimen, known as MVAC, given following surgery, has achieved durable complete responses in one third of advanced bladder cancer cases, DeVita said.

Conte asked why fewer than one percent of cancer patients are enrolled in clinical trials.

"That's a controversial area," DeVita said. "We need to educate the public. Paul Van Nevel (director of the Office of Cancer Communications) and our clinical trials people are working on that. We have to be able to complete clinical trials in five years, not 10"

Subcommittee member Joseph Early (D-MA) objected to DeVita's comment that to fund a new initiative, NCI had to cut from another. "That's irresponsible."

"We have to make choices, just like you,"

DeVita responded. "We have to take from one area when we see another in which we can save lives."

"I disagree," Early said. "I'm embarrassed when you say we could reduce breast cancer mortality 30 percent but we're not doing it."

He suggested that NCI's bypass budget was a more appropriate level than the Administration's request.

Hammer To Produce Joint US-USSR Teleconference "Cancer Summit"

"The Cancer Summit," a two hour global teleconference scheduled for March 29, will feature eight U.S. and Soviet cancer researchers speaking from their respective countries and exchanging information on recent cancer developments.

The teleconference will be carried live via satellite from Moscow and Bethesda, MD.

Armand Hammer, chairman of the President's Cancer Panel and a long time, practicing advocate of closer ties with the Soviet Union, will address the teleconference, which is being produced by Armand Hammer Productions.

The U.S. panel of scientists will make their presentations at Lister Hill Auditorium in the National Library of Medicine. Members of the panel are NCI Director Vincent DeVita, who will speak on "Cancer: The Problem and the U.S. Response;" Steven Rosenberg, chief of NCI's Surgery Branch, who will speak on "Interleukin-2;" Robert Gale, director of the UCLA Bone Marrow Transplant Unit, who will speak on "Chemotherapy and Bone Marrow Transplantation;" and Richard Steckel, director of the Jonsson Comprehensive Cancer Center at UCLA, who will speak on "Diagnostic Imaging Techniques."

The four Soviet panelists are researchers at the All Union Oncological Research Center in Moscow. They are Garry Abelev, who will speak on "Molecular Biological Aspects of Carcinogenesis;" Nikolai Napalkov, who will speak on "Prevention of Cancer in the Soviet Union;" Natalya Pervodchikova, who will speak on "Chemotherapy;" and Nikolai Trapeznikov, who will speak on "Problems of Oncology in the Soviet Union" and "Bone Tumors and Surgery."

The teleconference also will include prerecorded documentary films from both countries dealing with new advances in cancer research, public health measures, and personal experiences with cancer.

SOCMA Asks Congress For Probe On Carcinogen Classification Methods

Ronald Lang, president of the Synthetic Organic Chemical Manufacturers Assn., has asked Congress for an in depth investigation of the differing and sometimes inconsistent carcinogen classification methodologies used in the U.S. and by America's major trading partners.

Lang told the House Subcommittee on International Scientific Cooperation, that those inconsistencies threaten the future of international competitiveness of many diverse manufactured goods.

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

Environmental Health in the 21st Century--April 5-6, National Institute of Environmental Health Sciences, Research Triangle Park, NC. Contact Janet Riley, 919/541-7621.

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. Presented 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.

Neuro-Oncology Update, 1988--April 13, Detroit. Contact Clarence Vaughn MD, Dept. of Oncology, Providence Hospital, Southfield, MI 48037, phone 313/424-3342.

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 18-20, 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.

FDA Oncologic Drugs Advisory Committee--April 19,

Parklawn Bldg Rms G and H, Rockville, MD, 8:30 a.m.-5 p.m., open. Hearing and discussion on ifosfamide and colorectal cancer.

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 Communtech 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.

Cancer Biology & Immunology Contract Review Committee--April 25, NIH Bldg 31 Rm 8, open 9-9:30 a.m.

National Cancer Advisory Board Committee on Centers--April 26, Hyatt Hotel, O'Hare Airport, Chicago, 8:45 a.m.-6 p.m., open.

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.

Reach to Recovery: 5th European Congress--May 3-6, Luxembourg. Contact Reach to Recovery, p.a. Action Lions, Vaincre le Cancer, B.P. 782, 2017 Luxembourg.

Oncology Nursing Society--May 4-7, Pittsburgh. 13th annual congress. Contact Nancy Berkowitz, ONS, 1016 Greentree Rd., Pittsburgh, PA 15220.

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.

Developmental Therapeutics Contract Review Committee--May 5-6, Linden Hill Hotel, Bethesda, MD, open May 5 8-8:30 a.m.

Div. of Cancer Prevention & Control Board of Scientific Counselors--May 5-6, NIH Bldg 31 Rm 10, 8:30 a.m. both days, open.

Effects of Dietary Omega-3 Fatty Acids--May 8-12, Phoenix, AZ. American Oil Chemists' Society annual

meeting. Contact AOCS, PO Box 3489, Champaign, IL 61821, phone 217/359-2344.

National Cancer Advisory Board--May 9-11, NIH Bldg 31 Rm 6, open 8:30 a.m.-adjournment May 9, 8 a.m.-adjournment May 11. Closed May 10. Committee meeting information to be announced.

Course on Cancer Epidemiology--May 9-20, Moscow. Contact Dr. W. Davis, IARC, 150 cours Albert Thomas, 69372 Lyon Cedex 08, France.

Div. of Cancer Etiology Board of Scientific Counselors--May 12-13, NIH Bldg 31 Rm 10.

National Toxicology Program Board of Scientific Counselors--May 16-17, National Institute of Environmental Sciences, Research Triangle Park, NC.

President's Cancer Panel--May 17, Univ. of Wisconsin, Madison.

New Controversies in Breast Cancer--May 18, Middlebury Inn, Middlebury, VT. Focus on management of noninvasive intraductal and the new role of perioperative chemotherapy. Contact Mary Lou Giddings RN, OCN, Cancer Program Office, 160 Allen St., Rutland, VT 05701, phone 802/775-7111.

American Society of Clinical Oncology--May 22-24, New Orleans. 24th annual meeting. Contact ASCO, 435 N. Michigan Ave., Suite 1717, Chicago, IL 60611, phone 312/644-0828.

Fundamental Tumor Registry Operations--May 22-24, Seattle. Contact Connie Creitz, LPN, CTR, Local Coordinator, 206/228-3405.

National Tumor Registrars Assn.--May 24-27, Westin Hotel, Seattle. 14th annual conference. Contact NTRA, 104 Wilmot Rd., Suite 201, Deerfield, IL 60015, phone 312/940-8800.

American Assn. for Cancer Research--May 25-28, New Orleans. 79th annual meeting. Contact AACR, Temple Univ. School of Medicine, West Bldg Rm 301, Philadelphia, PA 19140, phone 215/221-4565.

Advances in the Applications of Monoclonal Antibodies in Clinical Oncology--May 25, London. Contact School Officer, RPMS, Hammersmith Hospital, DuCare Rd., London W12 OHS, UK.

Div. of Cancer Biology & Diagnosis Board of Scientific Counselors--May 31, NIH Bldg 31 Rm 9, 8:30 a.m., open.

Cancer Horizons--Planning for the Future--May 31-June 1, London. Contact European Study Conferences, Kirby House, 31 High Street East Uppingham, Rutland, Leics, LE15 9PY, UK.

FUTURE MEETINGS

8th Annual Cancer Symposium for Nurses--Nov. 7-9, Sheraton Harbor Island Hotel East, San Diego. Contact Nomi Feldman, Conference Coordinator, 3770 Tansy St., San Diego, CA 92121, phone 619/453-6222.

Monoclonal Antibodies and Breast Cancer--Nov. 17-18, Hilton & Tower, San Francisco. 3rd international workshop. Contact Kelly Travers, John Muir Cancer & Aging Research Institute, 2055 N. Broadway, Walnut Creek, CA 94596, phone 415/943-6314.

Biennial International Breast Cancer Research Conference--March 5-9, 1989, Tel Aviv. Contact Dr. Iafa Keydar, Conference Chairperson, Dean, George S. Wise Faculty of Life Sciences, Tel Aviv Univ., Ramat Aviv 69978, Israel.

Radiation Research Society and North American Hyperthermia Group--March 18-23, Westin Hotel, Seattle. RRS 37th annual meeting, NAHG 9th annual meeting. Contact Radiation Research Society, 1101 Market St., 14th Floor, Philadelphia, PA 19107, phone 215/574-3153.

The Cancer Letter

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