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IOM Says "Immediate Steps" Needed To Avert "Crisis" In Cancer Centers Program Funding

The Institute of Medicine committee reviewing NCI's Cancer Centers Program has recommended that the NCI director "take immediate steps to avert a crisis" in the program's funding for fiscal 1989, according to a copy of the
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In Brief

Wyngaarden To Leave This Summer; Fauci Probably Could Have The Job, May Not Want It

JAMES WYNGAARDEN, who resisted pressures from the Bush Administration to resign as NIH director earlier this year because he felt it would "politicize" the job, told institute directors and other senior staff last week that he would leave this summer. He did not reveal his future plans, but he retained his appointment as professor of medicine at Duke Univ. when he was appointed NIH director by President Reagan in 1982. He was chairman of the Dept. of Medicine at Duke. It is widely assumed that **Anthony Fauci**, director of the National Institute of Allergy & Infectious Diseases and NIH associate director for AIDS research, can have the NIH directorship if he wants it. President Bush singled out Fauci as a "national hero" during the election campaign. However, some of Fauci's colleagues feel he would be better off with his two present positions which permit him to concentrate on AIDS research. Assistant Secretary for Health **James Mason** will head the search for Wyngaarden's replacement. . . . **ADD THREE** more top NCI scientists to those leaving higher paying jobs: **Flossie Wong-Stall**, chief of the Molecular Genetics of Hematopoietic Cells Section in Robert Gallo's Laboratory of Tumor Cell Biology; and **Mika Popovic** and **Suzanne Gartner**, also out of Gallo's lab. Wong-Stall is joining the Univ. of California (San Diego) as professor of medicine and professor of biology. Popovic and Gartner are going to the New Mexico Primate Research Institute, Popovic as head of the Dept. of Virology. Gallo, agonizing over the departures, blamed the salary differentials. . . . **EDWIN MIRAND**, director of the Dept. of Education and dean of the Roswell Park Graduate Div. of the State Univ. of New York (Buffalo), has received the Dr. William H. Wehr Award from RPMI. Mirand's association with RPMI began as a graduate student in 1947 and he has been there ever since. . . . **SEN. BILL BRADLEY** (D-NJ) will address the American Roentgen Ray Society May 10 during its 89th annual meeting in New Orleans.

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Funding Increase For Cancer Centers Needed To Avert "Crisis," IOM Says

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the committee's report obtained by **The Cancer Letter**.

NCI should allocate up to \$6 million in the additional funding needed to fund the centers' core grants at 85 percent of recommended levels, the committee report said.

For fiscal 1990, the Administration should work with Congress to develop "an adequate budget" that will continue to provide support grants to the centers.

The long awaited report is scheduled to be made public today (April 28). The Senate Appropriations Committee requested the study in the NIH appropriations bill last year.

The recommendations in the report, titled "A Stronger Cancer Centers Program," generally follow suggestions made by the Assn. of American Cancer Institutes.

Ross McIntyre, president of AACI and director of the Norris Cotton Cancer Center in New Hampshire, submitted recommendations and testified before the committee earlier this year.

The report praises the centers program, which began in 1961, and was expanded and formalized by the National Cancer Act in 1971.

"The committee became convinced that the program is especially valuable at this time, because cancer centers provide an excellent environment for exploring the expanding opportunities to apply cancer research advances," Committee Chairman Charles Sprague, president emeritus of the Univ. of Texas Health Science Center, wrote in the preface to the report.

"Cancer centers are able to attract able researchers to cancer research, promote scientific interactions that transcend departmental and disciplinary lines and

translate basic research advances into better clinical practices and prevention efforts," Sprague wrote.

The report also makes the following recommendations:

<>NCI should strengthen its core support of cancer centers in order to exploit fully the application of advances in biologic, clinical and behavioral sciences in cancer prevention and treatment.

<>NCI should develop a systematic program plan this year to ensure adequate fiscal, managerial and organizational resources, coordination with related programs and effective scientific oversight for the Cancer Centers Program. The plan should take account of the changing fiscal and organizational arrangements involved in the delivery of health services.

<>The NCI director should consider how best to increase representation of the cancer centers program in NCI planning and decision making processes, including regular representation of the centers at the NCI Executive Committee meetings and creation of an external advisory committee to review their multidisciplinary programs.

<>The NCI director should substantially strengthen the management capabilities of the cancer centers program unit. That unit must be able adequately to plan, monitor, evaluate and implement the cancer centers program.

'A Valuable Resource'

The report notes that the centers "are a valuable resource for NCI." Scientists at the centers receive nearly half the research project grants awarded by NCI, as well as support from other NIH institutes.

"As a result, cancer center researchers have been involved in many of the important basic, clinical and epidemiologic cancer research advances made in the last 20 years."

The centers also are sites for more than half of the cancer research traineeships funded by NCI, and many centers are involved in NCI supported clinical trials and working groups.

Currently there are 59 centers; 15 are centers for basic research, 41 are primarily clinical research centers and three are consortium centers that focus on cancer control.

Support grants range in size from \$318,000 for the laboratory science center at Purdue to \$7.4 million for the Memorial Sloan-Kettering Cancer Center, the report said.

The report noted that cancer centers have been able to use their NCI support to

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"leverage" support from charitable organizations and other state, federal and private sources.

Despite their importance to NCI, the cancer centers program has received a smaller share of the NCI budget in the past few years, the report notes.

"As the rate of growth of funding of the core grant program declined, the number of centers fell from 64 in 1980 to between 58 and 60 in recent years, even though, beginning in 1982, NCI tried to stretch the funding by awarding only 85 percent of the individual grant amounts recommended through the peer review process.

"This year (fiscal 1989), funding for the centers program was increased slightly (by \$918,000) to \$101,345,000, and the same amount has been requested in the administration's budget for fiscal 1990.

"However, the total includes \$1 million a year that NCI began to allocate in fiscal 1989 for a program of supplemental core grants to existing centers that are making special efforts to address high rates of cancer incidence and mortality in minority populations.

"As a result of level funding, NCI expects to fund only about 54 centers in 1989. Another five or so centers would be lost next year if Congress appropriates the amount requested in the administration's budget, reducing the number of ongoing centers to about 49.

"The centers dropped from the program would most likely be clinical centers if the basic science centers continue to receive better peer review priority scores, as they have historically, because their programs are narrower in scope and more focused."

Of the 59 centers, 41 are in the continuing years of grants approved for three or five years, which leaves 17 centers competing for renewal grants. Two new institutions have applied for cancer center core grants for fiscal 1989.

According to NCI estimates, \$17.9 million will remain for the 19 competing centers after funds are allocated to the 41 continuing centers and the supplemental grants for minority programs.

The 17 centers up for renewal currently receive nearly \$21 million, but NCI estimates that the renewal applications will have recommended budget levels totalling \$25.7 million, the report said.

"Adding the \$2.3 million recommended by the review committee for the two new centers would bring the total to \$28 million, or \$10

million more than is currently available," the report said.

"If all the competing applications were successful and were funded at 85 percent of recommended levels, as they have been in recent years, the total needed would be \$23.8 million, still nearly \$6 million more than the \$17.9 million that is available."

Under the Administration's budget request, only about 12 of the 17 centers can be funded at 85 percent. If the competing centers were funded at full recommended levels, only eight could be funded, NCI estimates.

"If all 19 competing centers were funded, the awards would have to be reduced to about 64 percent of recommended levels, which would be a cut of about 21 percent from the current budget levels," the report said.

The Administration's fiscal 1990 budget requests level funding for the centers program.

"If this happened, a situation similar to this year's would recur, resulting in the loss of another five or more centers," the report notes. "If the NCI director moved funds from another research activity this year to keep more high quality centers, but the appropriation for 1990 is not increased, the loss of centers would only be deferred until next year.

Better Scores May Not Help

"Also, because only about a quarter of the centers come up for renewal each year, some centers may lose their core grant even though they have significantly better priority scores than centers funded in previous years.

"And because basic science centers tend to receive better priority scores on average than clinical centers, the centers that are lost will most likely be the clinical or comprehensive centers."

The NCI director should "take immediate steps to prevent erosion of the program's base during the current fiscal year," the report said. That means allocating up to about \$6 million from other programs to the centers program.

Where the money will come from is left up to the NCI director.

For the 1990 budget, the report does not recommend a specific level of funding, but says a budget should be developed that will "avoid the current situation" and provide grants to competing centers "that have excellent programs, as measured by peer review priority scores."

The committee recommended that the

mission of the cancer centers program be reassessed during the coming year. The report made the following recommendations:

--The centers program should provide more incentives for individual clinical centers to broaden the scope of their research agendas.

--The peer review process should continue. However, since the basic science centers have tended to receive better scores, the review criteria might be changed to recognize the efforts of centers to engage in interdisciplinary preclinical, clinical, prevention, rehabilitation and survivorship, epidemiologic and cancer control research, even when they are funded by other mechanisms.

"As community organizations, clinical cancer centers could, and most do, engage in providing state of the art patient care, continuing education of community clinicians who treat most cancer patients, screening and prevention programs, public information and other services, but they must fund these activities through other mechanisms," the report said.

"The review criteria and procedures in the current core grant guidelines do not consider a center's involvement in patient care, public information, or community education and outreach services, and they do not allow the use of core grant funds for those purposes.

"Thus a disparity exists between NCI's support of cancer centers as research institutions and the broader role of centers intended by Congress and expected by the public. This disparity between the broad role expected of cancer centers and the range of activities actually supported by the core grants is one of the issues that should be addressed in developing the program plan recommended by the committee."

--Recognition as a "comprehensive" cancer center should have a time limit and should be recommended through peer review.

The report said the IOM committee was aware that the National Cancer Advisory Board's Committee on Cancer Centers is considering revised guidelines for designating cancer centers as comprehensive.

"Since the NCAB last reviewed the comprehensiveness of centers in 1978, some clinical centers are said to have developed a range of activities at least as comprehensive as those of some officially designated comprehensive centers," the report said.

"Centers should be encouraged to broaden their activities in support of the full range of national cancer research program goals;

therefore, the committee endorses a concept, such as the proposal under consideration by the NCAB committee, that recognition as a comprehensive center be time limited and recommended through the same process of peer review that is used to review applications for support."

--NCI should take into account the relationship between the center core grants and the NCI funded research and training grants they are intended to support at each center.

"More than half of the core grant funds go to support shared resources and services for peer reviewed cancer research projects. If the plan proposes additional or expanded activities for the centers, the core grant guidelines might be revised to allow support of those activities."

--The long term plan for the centers should be developed by NCI program staff after consultation with experts and officials in and out of NCI and NIH. The plan should have milestones to measure progress.

Strengthening Organization

NCI's oversight of the centers program has become "increasingly fragmented" due to several changes in its location within NCI, the report said.

Until 1980, the program was located in a division with the other extramural grant programs of NCI. That year, the centers program was combined with parts of the former Div. of Cancer Control & Rehabilitation to form a new Div. of Resources, Centers and Community Activities.

In 1983 a prevention program was added to that division, which was then renamed the Div. of Cancer Prevention & Control. The centers branch was placed in a newly created Centers & Community Oncology Program.

The committee noted that the two organizational changes "were only incidentally concerned with the management of the centers program per se.

"The reorganizations had the effect of reducing the program to an organizational level that is not commensurate with its size or key relationships with the other research grants the program is designed to support and enhance by providing an interdisciplinary environment and shared resources."

The report stopped short of recommending where to locate the centers program within NCI. The committee leaves the decision up to the NCI director.

AACI, in the report it submitted to the

committee, recommended that the centers program be incorporated within a new NCI division of programs that, like centers, cross divisional lines of authority.

"We propose that this new division be called the Div. of Centers and Resources and that it include the Cancer Centers Program as well as education, training, construction, organ sites and the Community Clinical Oncology Program," McIntyre wrote in a Jan. 6 letter to the committee.

McIntyre wrote that since the program was placed in a division lacking the word "centers" in its title, "there has been a steady erosion of the amount of centers funding as a percentage of total NCI funding, from 8 percent to 6.8 percent in fiscal 1988."

Among the members of the IOM committee were Benno Schmidt, first chairman of the President's Cancer Panel and a leader in the effort that led to the passage of the National Cancer Act of 1971; Robert Day, director of the Fred Hutchinson Cancer Research Center in Seattle; Alfred Haynes, director of the Drew-Mehary-Morehouse Consortium Cancer Center in Los Angeles; Jean Johnson, professor and associate director for nursing oncology at Univ. of Rochester Cancer Center; Albert Owens, director of Johns Hopkins Oncology Center in Baltimore; and Robert Spallone, administrator of basic science and laboratory operations at Fox Chase Cancer Center in Philadelphia and former chief of NCI's Extramural Financial Data Branch.

Other members of the committee were Ivan Bennett, professor at New York Univ. Medical School; Gerard Burrow, vice chancellor for health sciences and dean of the School of Medicine, Univ. of California (San Diego); Mary Charlson, associate professor of medicine and director of the Clinical Epidemiology Unit, Cornell Univ. Medical College; Richard Cooper, executive vice president and dean of the Medical College of Wisconsin, Milwaukee; Arnold Kaluzny, professor in the School of Public Health at Univ. of North Carolina (Chapel Hill); Natalie Spingarn, health and social policy writer and consultant in Washington; and Jonathan Uhr, chairman of the department of microbiology, Univ. of Texas Health Science Center at Dallas.

The Committee on Centers of the National Cancer Advisory Board will meet May 3 in Chicago and again May 14 in Bethesda to consider the IOM recommendations and formulate its own.

Hrushesky To Pursue Chronobiology Work At Albany, Forms Clinical Group

William Hrushesky has spent his entire career at the Univ. of Minnesota, with much of his attention focused on chronobiology and development of what he calls the chronotherapy of cancer. Despite strong evidence he has turned up which shows that it does make a difference what time of the day or night cancer patients receive chemotherapy, he has had to struggle to achieve recognition and support.

Hrushesky has published some of his studies, and has presented at various scientific meetings. But few of his clinical colleagues have been interested in testing chronotherapy regimens, even after he helped develop automated delivery systems which allow drug administration around the clock at home. NCI had provided support for many years, but last year, Hrushesky's ROI missed by a few percentage points in being funded for another three years.

The Div. of Cancer Treatment opened the door for further chronotherapy research with an RFA issued last October. But even that is being threatened by an ironic twist: there are only a handful of investigators in the country who know anything about chronobiology, and most if not all of them--including Hrushesky--have submitted applications in response to the RFA. That doesn't leave any scientists knowledgeable in the field to do the review. The problem apparently has not been resolved.

Hrushesky, frustrated but not discouraged, will move to Albany Medical College of Union University in New York next month where he will continue chronobiology research with or without NCI support. He will be working in John Ruckdeschel's division with former Minnesota colleague Reinhard Roemeling, who recently moved to Albany to continue his chronobiology research.

Hrushesky's wife, Patricia Woods, is leaving her position in hematology/oncology at Minnesota to work in Ruckdeschel's division. She will investigate the molecular mechanisms of action of TNF and IL-2 in collaboration with Corrado Baglioni.

Hrushesky will also continue work on the practical problems posed by optimally timing cancer treatment in a complementary research program in drug delivery technologies with Rensselaer Polytechnic Institute's Departments of Biomedical and Chemical Engineering.

Hrushesky plans to tackle the problem of

access to clinical trials with chronotherapy by developing a chronotherapy study group, a regional cooperative group which to start will include nine institutions in the Albany area.

"We would like very much to expand the group," Hrushesky said. "Anyone in the mid-Atlantic and eastern area who wants in should call me." His phone number (after May 15) will be 518/445-5297.

Further indication of growing interest in chronobiology is seen in two upcoming meetings. A symposium on "Clinical Implications of Chronobiology" will be held June 20 at NIH. It will be in the NIH Clinical Center, Lipsett Auditorium, starting at 8:30 a.m., and is open to anyone with an interest in the subject. Copies of the program may be obtained from Dr. Kirt Vener, National Institute of Arthritis & Musculoskeletal & Skin Diseases, 301/496-0754.

The New York Academy of Sciences has scheduled a conference Feb. 26-28, 1990, on "Temporal Control of Drug Delivery." Hrushesky is cochairman along with Felix Theeuwes, of ALZA Corp., and Robert Langer, Massachusetts Institute of Technology (See Future Meetings, page 8).

ONS Meeting Again With ASCO, AACR In San Francisco; Awards Listed

The spring meetings of cancer professional societies once again will bring together the largest of them, the Oncology Nursing Society, with the American Society of Clinical Oncology and American Assn. for Cancer Research, meeting sequentially in the same city. Meeting concurrently with ASCO will be the Society of Surgical Oncology and the Society of Head & Neck Surgery. For 10 days, San Francisco will be overrun by oncologists.

ONS has had a policy of not holding its annual congress in states which did not ratify the equal rights amendment, thus precluding joining the others in Georgia and Louisiana the last two years. But California did vote for ERA.

The 14,000 member ONS will meet May 17-20, with an anticipated attendance of more than 4,000. Sessions will be held in the Moscone Convention Center, as will all the others except for some SSO and SHNS functions.

Ingebork Mauksch will give the ONS keynote address, "Understanding Our Past to Build Our Future." The Mara Mogensen Flaherty Memorial Lecture will be delivered by

Colleen Scanlon, "Creating A Vision of Hope: The Challenge of Palliative Care." The ONS/Schering Clinical Lecture will be given by Mary Cunningham, "Putting Creativity into Practice."

Deborah Mayer will conclude her two year term as ONS president, and will be succeeded by Delores Esparza.

ASCO will open its May 21-23 meeting with the popular educational and meet the professor sessions, with scientific presentations beginning the next day. Charles Coltman's Presidential Address will focus on ASCO's strategic planning efforts and results of the survey undertaken last year. NCI Director Samuel Broder will address the meeting May 22, followed by the Karnofsky Lecture, to be delivered by Gianni Bonadonna, "Conceptual and Practical Advances in the Management of Primary Breast Cancer."

Coltman will be succeeded by Robert Young.

The May 24-27 AACR meeting will open with the joint AACR/ASCO session on "Hematopoietic Growth Factors." Special lectures will include:

--G.H.A. Clowes Memorial Lecture, "Molecular Cytogenetics: Rosetta Stone for Understanding Cancer," by Janet Rowley.

--Richard and Hinda Rosenthal Award Lecture, "Human Genes that Cause Disease: Mapping with Intent to Clone," by Raymond White.

--Rhoads Memorial Award Lecture, "Genetic Alterations during Colorectal Tumorigenesis," by Bert Vogelstein.

--Cain Memorial Award Lectures, "Anti-estrogens: History and Development," by Leonard Lerner; and "Chemosuppression of Breast Cancer by Long Term Tamoxifen Therapy," by Craig Jordan.

Lawrence Loeb's Presidential Address will be "Molecular Oncology into the 21st Century." Loeb will be succeeded by Harris Busch.

SSO's annual awards and lectures were listed in The Cancer Letter March 24.

Oral Complications Are Reduced By Pretherapy, NIH Conference Finds

An NIH consensus conference concluded last week that pretherapy interventions could significantly lessen morbidity due to the oral complications of cancer therapy.

As many as 400,000 patients a year may develop oral complications that may be acute or chronic, according to the statement released

at the conference. As chemotherapy, radiation therapy and bone marrow transplantation have become more intensive, the complications from them have increased.

"At a minimum, oral complications are painful, diminish the quality of life and lead to significant compliance problems, often discouraging the patient from continuing treatment," the statement said. "At times, levels of oral morbidity may interfere with oncologic therapy, often necessitating suspension of therapy until such complications resolve. Cancer treatments may produce a breach in mucosal integrity, allowing pathogenic organisms to spread systemically."

Pre-existing oral pathology unrelated to cancer or therapy may increase the risk of oral complications. "Before the initiation of cancer therapy, a comprehensive pretreatment dental evaluation is mandated:

<>Establish baseline data with which all subsequent examinations can be compared.

<>Identify risk factors for the development of oral complications.

<>Develop strategies to avoid treatment complications during and following cancer therapy.

<>Perform necessary dental treatment to reduce complications.

Following are the conclusions and recommendations of the consensus statement:

<>Treatment of oral pathology is essential in minimizing oral complications in all cancer patients.

<>Prophylactic acyclovir is beneficial in selected patients to prevent HSV reactivation.

<>Precise diagnosis of mucosal lesions and specific treatment of fungal, viral and bacterial infections are essential.

<>Mucosal ulcerations should alert the cancer team to the risk of systemic infection.

<>The best treatments for chronic xerostomia include fluorides, attention to oral hygiene and sialagogues.

<>Awareness of osteoradionecrosis is essential as it can be prevented. When present, it is best managed with hyperbaric oxygen alone or with surgery.

<>In the pediatric population, it is important to recognize the long term consequences of radiation therapy in addition to the dental and developmental abnormalities and secondary malignancies.

<>Studies of oral complications should be incorporated in cooperative group protocols.

<>Direct family involvement in patient care is essential for maximum treatment compliance.

NCI Advisory Group, Other Cancer Meetings For May, June, Future

Photosensitization: Medical and Environmental Applications--May 1-3, Toledo. Intensive short course. Contact Pat Green, Center for Photochemical Sciences, Bowling Green State Univ., Bowling Green, OH 43403, phone 419/372-2033.

National Committee to Review Current Procedures for Approval of New Drugs for Cancer and AIDS--May 2, NIH Bldg 31 Rm 10, 9 a.m.-4 p.m., open.

National Cancer Advisory Board Committee on Cancer Centers--May 3, O'Hare Hilton, Chicago. 9:30 a.m.-4 p.m., open.

Great Lakes Symposium on Photodynamic Cancer Therapy--May 4-5, Toledo. Contact Office of Continuing Medical Education, Medical College of Ohio, C.S. 10008, Toledo 43699, phone 419/381-4237.

Div. of Cancer Prevention & Control Board of Scientific Counselors--May 4-5, NIH Bldg 31 Rm 10, 8:30 a.m., all open.

American Roentgen Ray Society--May 7-12, New Orleans. 89th annual meeting. Contact American Roentgen Ray Society, PO Box 2348, Merrifield, VA 22116.

Sunlight, Ultraviolet Radiation and the Skin--May 8-10, NIH Clinical Center, Masur Auditorium. NIH consensus development conference. Contact Andrea Manning, Prospect Associates, 1801 Rockville Pike, Suite 500, Rockville, MD, phone 301/468-MEET.

Cancer Management Course--May 12-13, James Graham Brown Cancer Center, Louisville. Contact John Spratt, M.D., American College of Surgeons, Cancer Dept., 55 E. Erie St., Chicago, IL 60611, phone 312/664-4050.

10th International Congress of Cytology--May 14-18, Buenos Aires. Contact Dr. Lucrecia Illescas de Peluffo, Cabello 3830, Buenos Aires 1425, Argentina.

NCAB Committee on Minority Manpower Development--May 14, NIH Bldg 31 Rm 4, 6 p.m., open.

NCAB Committee on Cancer Centers--May 14, NIH Bldg 31 Rm 7, 7:15 p.m., open.

NCAB Committee on the Agenda--May 14, NIH Bldg 31 Rm 7, 9 p.m.

National Cancer Advisory Board--May 15-16, NIH Bldg 31 Rm 6, open May 15 8:30 a.m.-5 p.m. and May 16 2:30 p.m.-adjournment.

NCAB Committee on AIDS--May 15, NIH Bldg 31 Rm 7, 5 p.m., open.

NCAB Committee on Information and Cancer Control for the Year 2000--May 15, NIH Bldg 31 Rm 8, 5 p.m., open.

NCAB Committee on Planning & Budget--May 15, NIH Bldg 31 Rm 11A10, 6:30 p.m., open.

Frederick Cancer Research Facility Advisory Committee--May 15-16, FCRF Bldg 549, Frederick, MD. Open May 15, 8:30-11 a.m.

Fourth Princeton Liposome Conference--May 15-16, Scanton Conference Center, Princeton. Contact Susan Hernandez or Paula Pluta, phone 609/452-7060.

Care of the Patient with Advanced Cancer--May 15-19, Oxford, UK. Contact Study Centre Coordinator, Sir Michael Sobell House, Churchill Hospital, Oxford OX3 7LJ, UK.

Frontiers in Cancer Research--May 16-17, New York. Contact Julie Beaver, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York 10021, phone 212/639-3573.

Oncology Nursing Society--May 17-20, Moscone Convention Center, San Francisco. 14th annual congress.

Transforming Growth Factor-Betas: Chemistry, Biology, Therapeutics--May 18-20, Key bridge Marriott, Arlington, VA. Cochairmen are Karl Piez, Collagen Corp.; and Michael Sporn, NCI. Contact Conference

Dept., New York Academy of Sciences, 2 East Third St., New York 10021, phone 212/838-0230.

Molecular Events in Mutation and Cancer--May 21-23, Tiburon, CA. Third AACR Special Conference in Cancer Research. Participation is by application only. March 15 is the deadline for applications. For copies of the application form, contact American Assn. for Cancer Research, phone 215/440-9300.

American Society of Clinical Oncology--May 21-23, Moscone Convention Center, San Francisco. 25th annual meeting.

Society of Surgical Oncology and Society of Head & Neck Surgeons--May 21-24, St. Francis Hotel and Moscone Convention Center, San Francisco. Joint annual meeting.

Sixth International Conference on Human Tumor Markers--May 23-26, Tokyo. Contact International Academy of Tumor Marker Oncology '89, c/o Kinki Nippon Tourist Col., Ltd., Inbound Sales Office, Tokyo Kintetsu Bldg. 2F, 10-2, Kanda Matsunagacho, Chiyodoku, Tokyo 101, Japan.

American Assn. for Cancer Research--May 24-27, Moscone Convention Center, San Francisco. 80th annual meeting.

Molecular Aspects of Growth Control--May 28-31, Honolulu. Joint meeting of AACR and the Japanese Cancer Assn. Contact AACR, 530 Walnut St., 10th Floor, Philadelphia, PA 19106, phone 215/440-9300.

Familial Cancer--June 1, Basle, Switzerland. Contact Swiss Cancer League, Monbijoustr. 61, 3001 Berne, Switzerland.

Clinical Trials Committee--June 1-2, Executive Plaza North Rm J, Rockville, MD, open June 1 9-9:30 a.m.

Div. of Cancer Treatment Board of Scientific Counselors--June 5-6, NIH Bldg 31 Rm 10, 8:30 a.m. Closed June 6 8:30-9:30 a.m.

Centennial of Johns Hopkins Medicine--June 7-11, Baltimore. Includes scientific symposia, unveiling of a postage stamp honoring the institution's founder, an art exhibit featuring medical masterpieces, concerts and fireworks. Contact Johns Hopkins Office of Public Affairs, Suite 1100, 550 N. Broadway, Baltimore, MD 21205, phone 301/955-6680.

Spirituality: A Neglected Dimension in Patient Care--June 8, Rochester, NY. Oncology Nursing Society, Genesee Valley Chapter. Contact Michele Haller, RN, Strong Memorial Hospital, 601 Elmwood Ave., Rochester, NY 14642, phone 716/275-2171.

Cancer Management Course--June 8-10, Little Rock, AR. Contact Cancer Dept., American College of Surgeons, 55 E. Erie St., Chicago, IL 60611, phone 312/664-4050.

Acrylonitrile Oversight Committee--June 8, Executive Plaza North Rm H, Rockville, MD, 9 a.m., open.

16th International Congress of Chemotherapy--June 11-16, Jerusalem. Contact Scientific Secretariat, 16th Congress of Chemotherapy, POB 983, Jerusalem 91009, Israel.

Drug Delivery of Proteins--June 12-14, Boston. Contact Technology Management Group, Conferences Div., 25 Science Park, New Haven, CT 06511, phone 203/786-5445.

Biology & Immunology Contract Review Committee--June 12-13, NIH Bldg 31 Rm 2, open June 12 9-9:30 a.m.

Ovarian Cancer: Problems but Progress--June 14, Cleveland. Contact Cleveland Clinical Educational Foundation, Dept. of Continuing Education (TT31), 9500 Euclid Ave., Cleveland, OH 44195, phone (local) 444-5696; (Ohio) 800/762-8172; (elsewhere) 800/762-8173.

The Other Side of Cancer--June 14, Los Angeles. Cancer Management Network of Southern California. Contact RoseAnn Cadena, phone 213/224-7368.

Biometry & Epidemiology Contract Review Committee--June 20, NIH Bldg 31 Rm 8, open 10-11 a.m.

Div. of Cancer Biology & Diagnosis Board of Scientific Counselors--June 22, NIH Bldg 31 Rm 2, 8:30 a.m.

Assn. of American Cancer Institutes--June 22-23, Puerto Rico. Annual meeting. Contact Maria Neris, 809/751-6242, or Dr. Edwin Mirand, 716/845-3028.

Scientific Foundations for Clinical Progress--June 26-27, Senate House, Univ. of London. Euro-Oncology 89. Contact BDI Conferences Ltd., 3 Beaconsfield Terrace Rd., Kensington, London W14 0PP, England.

Fifth Annual Meeting on Oncogenes--June 27-July 1, Frederick, MD. Sponsored by the Foundation for Advanced Cancer Studies. Contact Margaret Fanning, FACS, PO Box 249, Libertytown, MD 21762, phone 301/898-9266.

Div. of Cancer Etiology Board of Scientific Counselors--June 29-30, NIH Bldg 31 Rm 10, 8:30 a.m.

FUTURE MEETINGS

National Conference on Breast Cancer--July 19-21, Chicago. Sponsored by the American Cancer Society for health professionals. Topics will include status of breast cancer cause and prevention, review of modalities for detection and diagnosis, and new approaches to breast cancer treatment and rehabilitation. Contact ACS, 1599 Clifton Rd. NE, Atlanta, GA 30329.

Community Cancer Centers: Critical Link for the Year 2000--Oct. 5-6, Killington, VT. Contact Green Mountain Oncology Group, 160 Allen St., Rutland, VT 05701, phone 802/775-7111 Ext. 184.

XIVth International Symposium for Comparative Research on Leukemia & Related Diseases and Satellite Symposium Workshop on AIDS--Oct. 8-12, Vail, CO. Contact Dr. David Yohn, Secretary General, Suite 302, 410 W. 12th Ave., Columbus, OH 43210.

Temporal Control of Drug Delivery--Feb. 26-28, 1990, New York. Conference will define the biological imperative for construction of time based nonzero order drug delivery systems, and will include contributed poster sessions. A 200 word summary of work to be presented should be sent to William Hruskesky, M.D., Professor of Medicine, Medical Oncology, Albany Medical College, 47 New Scotland Ave., MSX-30, Albany, NY 12208. For additional information, contact Conference Dept., New York Academy of Sciences, 2 East 63rd St., New York 10021, phone 212/838-0230.

Sixth International Conference on the Adjuvant Therapy of Cancer--March 7-10, 1990, Tucson. Chaired by Sydney Salmon, with Gianni Bonadonna, Lawrence Einhorn, Bernard Fisher, Emil Frei, Charles Moertel and Vincent DeVita as scientific advisors. Deadline for abstracts is Dec. 1. For abstract forms, preliminary program and further information, contact Mary Humphrey, Conference Coordinator, Arizona Cancer Center, Univ. of Arizona College of Medicine, Tucson 85724, phone 602/626-2276.

Interaction of Radiation Therapy and Systemic Therapy--March 9-12, 1990, Asilomar Conference Center, Monterey, CA. Third international meeting. For abstract packages and additional information, contact Suzanne Bohn, Projects Coordinator, American College of Radiology, 1101 Market St., Philadelphia, PA 19107.

NCI Contract Awards

Title: AIDS DTP computer DIS installation
Contractor: Fein Maarquart Associates Inc., \$278,816

Title: Resource for collection and evaluation of human tissues and cells from donors with epidemiological profiles
Contractor: Univ. of Maryland School of Medicine, \$2,286,039

Title: Radiotherapy treatment planning tools
Contractor: Univ. of Washington, \$879,115

Title: Radiotherapy treatment planning tools
Contractor: Univ. of North Carolina, \$1,169,704