18th Annual Symposium Topic
"Cellular Radiation Biology"

The subject of the 18th Annual Symposium on Fundamental Cancer Research will be "Cellular Radiation Biology," Dr. Robert J. Shalek, head of the department of physics at MDAH and chairman of the Symposium Committee, has announced.

The yearly Symposium, sponsored by MDAH and The University of Texas Graduate School of Biomedical Sciences at Houston, will be held on March 2, 3, and 4, 1964, at the Shamrock Hilton Hotel in Houston.

The purpose of the annual meetings is to bring together scientists working on one aspect of cancer research and those in related areas, for exchange of current information and discussion of common problems.

Outstanding researchers from institutions throughout the world will present papers at the six sessions of the meeting. Each session will be followed by a discussion period in which all those in attendance may participate.

The topics of the sessions and the session chairmen include the following:


Session II: Radiation Effects on Replication of Cellular Structures. Chairman, Alexander Hollaender, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Session III: The Critical Structures in Radiation Phenomena. Chairman, Franklin Hutchinson, Department of Molecular Biology and Biophysics, Yale University, New Haven, Connecticut.

Session IV: Modification of Radiation Response. Chairman, Arthur Cole, Department of Physics, MDAH.

(Symposium, continued on page 2)

Virologist Isolates
Viruslike
Particles In Human
Blood Plasma

Dr. Leon Dmochowski, chief of the section of virology and electron microscopy at MDAH, has advanced another step toward the eventual explanation of the part viruses may or may not play in causing human cancer.

In a paper presented at the 57th Annual Meeting of the Southern Medical Association in New Orleans on November 18 to 21, Dr. Dmochowski told of discovering particles resembling virus particles in the blood plasma of a mother and son.

Background Research

In earlier studies, Dr. Dmochowski has demonstrated virus particles in certain leukemias in lower mammals and avians. These virus particles isolated from one host induce leukemia in another.

Strains of high- and low-leukemic mammals have been developed, and it has been found that in those mammals prone to leukemia development, virus particles are present before any clinical symptoms appear. Eighty per cent of these mammals later develop leukemia.

However, before any animal develops leukemia, it must have a suitable genetic tendency. So in order for leukemia to occur in a mouse or chicken, both the genetic tendency and the presence of virus particles are necessary.

Cancer-Prone Family

The findings that Dr. Dmochowski reported at the New Orleans meeting resulted from a cooperative study with Dr. Paul Condit of The Oklahoma Medical Research Foundation of Oklahoma City, and were based on the examination of blood plasma from a family with a history of high incidence.

(Virologist, continued on Page 3)
MDAH Honors Its Volunteers

The MDAH cafeteria was the scene of a lively party on the afternoon of Saturday, October 26. The hospital staff was honoring its distinguished group of volunteers with a tea in recognition of their outstanding contributions in time, effort, and energy.

The Anderson volunteers are ably guided by Miss Marie Gay, administrative assistant in charge of volunteer services.

Volunteers are actively involved in numerous areas of hospital work. Some of their services to patients include helping with menu selection, acting as ward hostesses, taking books, magazines, and newspapers to patients.

Volunteer aid is indispensable in the administrative departments of the hospital where the women help by filing, typing, and doing clerical work. Also, the volunteers make many of the sheets and other supplies used in the hospital and work in the hospital blood bank.

Dr. Clark has stated that literally thousands of hours of work are contributed annually by the volunteers in a spirit of loyalty and devotion.

One-Man Symposium

Dr. Felix N. Rutledge, gynecologist and chief of the section of gynecology at MDAH, recently undertook a program of a highly unusual and demanding nature. During a one and one-half day period, he presented 8 papers, participated in a discussion of a case presentation, and performed a demonstration operation.

The occasion was as part of the Visiting Professor Program of the Bernalillo County Indian Hospital in Albuquerque, New Mexico, sponsored by the hospital in conjunction with the University of New Mexico School of Medicine. For the days of November 22 and 23, 1963, Dr. Rutledge served as visiting professor.

Titles of the papers Dr. Rutledge presented included the following: Treatment of Carcinoma of the Ovary; Carcinoma of the Endometrium—Factors in Therapy; Carcinoma of the Vulva; Methods of X-Ray Therapy; The Role of Surgery in Treatment of Carcinoma of the Cervix; Local Application of Radium; Retropitoneal Tumors; Spread Pattern in Cancer.

Grants Support MDAH Research and Education

A total of $617,169, representing 20 grants, has been awarded to MDAH in support of research and education. The division for cancer research of the U.S. Public Health Service made the following awards:

1. $31,506 to Daniel E. Bergsagel, associate internist, for the seventh year of a seven-year award for studies of the Southwestern Cancer Chemotherapy Study Group.
2. $27,779 to William C. Dewey, chief, section of isotopes, for the sixth year of a seven-year award for studies on the radiosensitivity of normal and malignant cells.
3. $40,298 to Leon Dmochowski, chief, section of virology and electron microscopy, for the sixth year of a seven-year award for in vitro and in vivo studies on Gross mouse leukemia virus.
4. $15,291 to Gilbert H. Fletcher, head, department of radiology, for the third year of a five-year research study on cervical cancer and leukemia.
5. $46,592 to Dr. Fletcher for studies on the extension of radiotherapy research.
6. $7,396 to Dr. Fletcher as a supplement for training in radiation research on cancer.
7. $13,341 to N. Burr Furlong, assistant biochemist, for the second year of a three-year award for a study of inhibitors of deoxyribonucleic acid polymerase.
8. $91,093 to Clifton D. Howe, head, department of medicine, for the third year of a three-year award for studies of new antitumor agents.
9. $15,246 to R. F. McGregor, assistant biochemist, for the first year of a two-year award for studies on lipid metabolism in estrogen-induced renal tumors.
10. $185,176 to Clifton F. Mountain, associate general surgeon (thoracic), in support of the research program "Biomathematics in a Cancer Research Institute."
11. $3,840 to Robert S. Nelson, chief, gastroenterology service, for the second year of a four-year award for a small bowel biopsy study of neoplasia and chemotherapy.
12. $9,132 to George G. Rose, assistant biologist, for the second year of a three-year award for research on helical and related megamolecules produced in vitro.
13. $4,161 to William O. Russell, head, department of pathology, as a supplement for training and research in pathology.
14. $15,000 to Robert J. Shalek, head, department of physics, for a symposium on cellular radiation biology.
15. $22,605 to Grant Taylor, chief, section of pediatrics, for the second year of a two-year award for bone marrow studies of children with leukemia and lymphoma.
16. $37,824 and $35,439 in two grants to Dr. Taylor for support of the seventh year of a seven-year award for studies of the Southwestern Cancer Chemotherapy Study Group.

Other grants received recently include the following:

1. $8,000 from the Welch Foundation to A. Clark Griffin, biochemist, as a one-year supplement for studies on the role of nucleoproteins in modifying carcinogenesis.
2. $1,450 to Felix L. Haas, head, department of biology, from the John Q. Gaines Foundation, in support of research in the molecular biology of cell development and differentiation.
3. $4,000 from Ethicon, Inc., to John E. Healey, Jr., chief, section of experimental surgery, for interim support of studies on nonsuture repair of body tissues using a plastic adhesive.
of cancer. For five generations (as far back as can be documented), 80 per cent of the family members have had some kind of cancer, with a prevalence of leukemia in the last two generations.

In the immediate family studied, there are five sons. One of the boys, who has an identical twin, has leukemia.

With the electron microscope, Dr. Dmochowski and Mr. C. E. Grey of MDAH examined blood plasma from each of the children and from the father and mother. In plasma from the leukemic twin and from the mother, they found particles resembling the virus particles found in mice. In the nonleukemic twin, the father, and the remaining sons, no such particles were demonstrated.

Briefly, the point of the study is this: Particles resembling the leukemia-inducing virus particles found in mammals and birds were found in a mother and her leukemic son. This may be coincidence, but might also be indicative of a genetic transmission of the virus particles and/or the disease.

No viruslike particles have yet been found in the nonleukemic, identical twin. Perhaps they are not there, or if there, are in a form not yet discernible or demonstrable by present electron microscope techniques.

Dr. Dmochowski, in cooperation with Dr. Condit, plans to examine blood plasma of other family members and to examine further plasma samples from the immediate family at intervals.

Diagnostic Use

With these results from human blood plasma study, Dr. Dmochowski is using a new scientific procedure, that of microepidemiology—"micro" because microscopical techniques are used and "epidemiology" because statistics are obtained from a small community of a family.

Uses of microepidemiology are manifold. It should be adaptable to diagnostic purposes; i.e., by periodic examination of the blood plasma, a "lookout" for virus particles can be kept. This may help not only in the diagnosis of leukemia or other forms of cancer, but in the diagnosis of other diseases as well. Also, conclusions may be drawn for future correlational studies between the appearance of the characteristic particles in increased numbers and the onset of leukemia.

Further Applications

If, as has been suggested, the presence of particles resembling viruses in the blood of nonleukemic patients could be used as a diagnostic tool for study of future leukemia development, then earlier treatment could be undertaken. Even though the virus particles might not be the causative agent of leukemia, if they are consistently present in the majority of patients who eventually develop the disease, then diagnosis could be accomplished.

Drugs are available today which are highly effective in the treatment of leukemia for short periods of time. Perhaps in the future, leukemia and other forms of cancer can be controlled for even longer periods of time, maybe permanently if diagnosed early enough.

Studies along these lines will be continued by the members of the virology and electron microscopy section in cooperation with staff of the sections of hematology and pediatrics in the department of medicine at MDAH.

NEW PATIENTS TREATED AT MDAH 1962—1963

Texas residents ............... 4,083
Out-of-state residents ....... 232
Foreign residents ............. 75
Total 4,390

New patients from all but two Texas counties (252) were seen for treatment or consultation at MDAH during the past fiscal year ending August 31, 1963.

New patients seen during that period of time also included representatives from three foreign countries.
Foreign Cancer Authorities Visit MDAH

Two distinguished cancer leaders, brought to the United States by the American Cancer Society to visit American cancer centers, spent three days at MDAH talking with staff members, inspecting their research facilities and laboratories, and observing the way in which this institution combines research, patient care, and education into one effective unit.

The visitors were Dr. Witold J. Rudowski of Warsaw, Poland, and Dr. Ammuy Smerasuta, of Dhonburi, Thailand.

The two doctors arrived in New York on September 29 and departed from there on November 10. During their six-week tour, they visited most of the major cancer research and treatment centers in the U.S. and met with many of the foremost American cancer research scientists of the day. They were in Houston from Thursday, October 31, through Sunday, Nov. 3.

DR. RUDOWSKI

Dr. Rudowski is a surgeon at the M. Curie Institute of Oncology in Warsaw, and is scientific secretary of the Institute. Since 1955, he has been editor-in-chief of the quarterly review Nowotwory (Neoplasms) which is published in Polish. He is also a member of the international board of editors of Excerpta Medica for the section on cancer.

Dr. Rudowski is responsible for the education and training programs at the Institute. As a clinician, he has no specific research programs, although he is especially interested in thyroid gland tumors. According to Dr. Rudowski, a surprisingly high incidence of cancer of the thyroid is seen in Poland. As in the United States, cancer is second only to heart disease as a cause of death in Poland.

DR. SMERASUTA

Dr. Smerasuta is professor and head of the department of radiology at Siriraj Hospital in Dhonburi, Thailand. He is a committee member of both the Thai Atomic Energy Commission and the National Cancer Institute of Thailand. He is also president of the Thai Cancer Society and vice president of the Radiological Society of Thailand.

Outside of his work in the hospital, Dr. Smerasuta is primarily interested in voluntary cancer societies, cancer education for the public, and the establishment of cancer detection and treatment clinics. In 1961, Dr. Smerasuta compiled the first statistics on cancer incidence in Thailand.

Dr. Smerasuta was accompanied on the tour by his wife.

New Book Off

The Press

Viruses, Nucleic Acids, and Cancer, a collection of papers presented at the Seventeenth Annual Symposium on Fundamental Cancer Research, was published in November by The Williams and Wilkins Company of Baltimore, Maryland. The Symposium, sponsored by MDAH and The University of Texas Postgraduate School of Medicine, was held February 20 to 22, 1963. Participants at the 1963 meeting included leading scientists from Africa, Canada, England, Germany, Israel, Italy, Russia, and the United States.

The papers included in the monograph concern theories and experimental results related to the current concept that viruses or their nucleic acid components induce certain forms of cancer.

Contents of Monograph

The volume is divided into eight sections: "Structure of Viruses"; "Replication of Viruses: Biochemistry of Virus-Infected Cells"; "Viral Nucleic Acid: Properties and Mode of Replication"; "Avian Viruses and Neoplasia"; "Viruses and Interferon"; "Biological Aspects of Tumor Induction by Viruses"; "Interrelationship of Viruses: Intracellular and Extracellular Factors in Neoplasia"; and the Bertner Foundation Lecture.

Aid To Research

In addition to the formal papers presented at the symposium, three other factors make the book significant to virology researchers.

The volume contains the full text of the 11 discussion sessions held during the meeting. Some of the discussions are extemporaneous opinions and others are questions and extended answers, as well as formal discussion papers.

A second factor is the excellence and abundance of illustrations. Photographs taken through the electron microscope are naturally highly specialized, and the ones in this volume are of unusually good quality.

The third factor contributing to the high standard of the book is the complete list of references accompanying each of the 40 papers. The book is an invaluable research tool, for its bibliographies refer back to the original, historical publications in virology, as well as covering the field of current and recent research.

Also included in the book is the Bertner Foundation Award Lecture which was presented by the 13th Annual Award recipient, Dr. Ludwik Gross. Discoveries in murine leukemia by Dr. Gross have encouraged investigations of other mammalian leukemias. If human leukemia is proved virus-induced and a vaccine against it developed, it will be a direct result of Dr. Gross' studies.

The book has been published by The Williams and Wilkins Company, 428 East Preston Street, Baltimore 2, Maryland.
"Tumors of Bone and Soft Tissue" was the subject of the Eighth Annual Clinical Conference, held November 8 and 9 in the Texas Medical Center. The annual conference, sponsored by MDAH and The University of Texas Graduate School of Biomedical Sciences at Houston, was to have been held in the MDAH auditorium as in the past, but advance registration proved so large that the conference was moved to the auditorium of The University of Texas Dental Branch (adjacent to MDAH in the Texas Medical Center), which has a larger seating capacity.

At final count, registration for the conference totaled 359, with 72 registrants coming from out of state and one from a foreign country.

Chairman of the Program Committee was Dr. Murray M. Copeland, MDAH associate director for education; co-chairman was Dr. Richard G. Martin, associate general surgeon. Other committee members were Mr. Joe E. Boyd, Jr., Dr. James J. Butler, Dr. Russell W. Cumley, Mr. Arthur F. Kleifgen, Dr. John P. McGraw, Dr. Frank F. Parrish, Dr. J. Leslie Smith, Jr., Dr. Herman D. Suit, and Dr. Joe E. Boyd, Jr., Dr. James J. Butler, Dr. Russell W. Cumley, Mr. Arthur F. Kleifgen, Dr. John P. McGraw, Dr. Frank F. Parrish, Dr. J. Leslie Smith, Jr., Dr. Herman D. Suit, and Dr. E. C. White, all members of the MDAH staff.

Presiding at the sessions were Dr. Copeland, Dr. Martin, and Dr. Parrish, chief of orthopedic service at MDAH.

The first paper, "A Systematic Approach to the Roentgen Diagnosis of Bone Tumors," was presented by Dr. Gwilym S. Lodwick, professor and chairman, department of radiology, University of Missouri School of Medicine, Columbia, Missouri. Dr. Lodwick evaluated the diagnostic value of roentgenography for bone tumors. He advocated careful consideration in establishing the type of tumor, and offered a three-way classification for individual bone tumors ranging from the static or slow-growing lesion to the highly aggressive tumor.

Two papers on fundamental aspects of bone tumors were presented by Dr. Robert A. Robinson, professor of orthopedic surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland. The papers were "Morphology of Osteoblasts, Osteocytes and Osteoclasts with Bone Matrix and Some Remarks on a represented a definite advance in the understanding of bone and its support-

Dr. Charles F. Geschickter, chairman of the department of research pathology, Georgetown University Medical School, Washington, D.C., spoke on "Mutations and Congenital Abnormalities in Relation to Bone Neoplasms." He indicated a possible relationship of certain forms of steroid therapy to the abnormal formation of bones.

Six staff members from MDAH were among those who presented papers at the Conference. Several other members from this institution also took part in various programs of this two-day meeting.

Dr. E. C. White, head of the department of surgery at MDAH, presented a paper on "Massive Resection, Forequarter Amputation, and Hemipelvectomy in the Treatment of Bone and Soft Tissue Tumors." Complementing his presentation with a number of slides, Dr. White demonstrated indications for the different modes of surgical therapy and discussed manners in which MDAH surgeons had improved on traditional methods of resection.

Dr. David C. Dahlin, professor of pathology, Mayo Clinic, Rochester, Minnesota. In his presentation, Dr. Dahlin described the method by which Ewing's sarcoma and malignant lymphoma can be differentiated, and pointed out that the two entities occur in two different age groups.

Dr. Murray Copeland of MDAH participated in the Clinical Conference not only as Program Chairman, but he also presented a paper, moderated a (Conference, continued on page 6)
In his paper on “Parosteal Osteoma: Differential Diagnosis and Treatment,” Dr. Murray M. Copeland presented results of 26 cases of parosteal osteoma which have been reported. Following a description of the characteristics of the tumor, he stated that bone be divided into two general categories—the well-differentiated and the poorly differentiated. He also emphasized that among soft part sarcomas, the fibrosarcoma is the one most likely to invade neighboring bone.

Dr. Franz M. Enzinger, chief of the soft tissue pathology branch at the Armed Forces Institute of Pathology, Washington, D.C., delivered two papers at the meeting. The first was entitled “Recent Trends in Soft Tissue Pathology,” and the second, “Fibrous Tumors of Infancy.” In the first paper, Dr. Enzinger presented a thorough study of trends in interpretation of soft tissue pathology, and delineated various neoplastic diseases and disease processes of soft tissues according to tissue origin, natural history, and effective treatment. In the second paper, Dr. Enzinger reviewed 250 fibrous tumors which occurred in patients between birth and 15 years of age.

Dr. Richard G. Martin presented a paper titled “Soft Tissue Tumors: Surgical Treatment and Results,” co-authored by Dr. James J. Butler, assistant pathologist at MDAH. A series of facts gathered at MDAH in the treatment of patients with soft tissue tumors and discussion of the results obtained were presented.

“Rhabdomyosarcoma: Clinico-pathologic Considerations and Report of 85 Cases” was presented by Dr. Jorge Albores-Saavedra, senior fellow in pathology at MDAH. He reviewed cases of rhabdomyosarcoma seen at MDAH and concluded with an observation on the differences between this disease and other types of soft part sarcoma.

Dr. John S. Stehlin, Jr., associate general surgeon at MDAH, spoke on “Regional Chemotherapy and Radiation Therapy of Soft Tissue Tumors.” He presented methods for the use of chemotherapy in the treatment for soft tissue tumors, and presented the results of such treatment at MDAH.

Included in the meeting's agenda were three panel discussions. These were:

“Histogenesis of Bone Tumors,” moderated by Dr. Copeland. Panelists included: Dr. Dahlin, Dr. Geschickter, Dr. Jaffe, and Dr. Sherman.

“Problems in Diagnosis and Treatment of Soft Tissue Tumors,” moderated by Dr. Martin. Panelists included: Dr. Enzinger, Dr. McGraw, Dr. Stehlin, Dr. Suit, Dr. White, and Dr. Butler.

Proceedings of the conference will be published as a monograph entitled “Tumors of Bone and Soft Tissue,” with publication in 1964.

Three papers which were read by title only at the conference will be included in the monograph. These include the following:

“Cartilaginous Tumors of Bone” by Drs. Copeland and Geschickter.

“Osteogenic Sarcoma” by Drs. Geschickter and Copeland.

“Fibrous Tissue Tumors” by Dr. Butler.

Support for the conference was contributed in part by the American Cancer Society, Texas Division, and by a Community Cancer Demonstration Project Grant from the Public Health Service.
University of Rochester School of Medicine and Dentistry. From 1943 to 1962, Dr. Meneely was a member of the faculty of Vanderbilt University Medical School. Prior to his appointment, he served as director, Department of Scientific Assembly, and secretary, Council on Scientific Assembly, American Medical Association, and associate professor of medicine, Northwestern University Medical School. He is associate editor of *Medicina Thoracalis* and has been associate editor of the *American Journal of Cardiology* and the *American Journal of Medicine*.

José María Trujillo has accepted the position of assistant pathologist, section of hematology/immunology of research clinical pathology, department of pathology. Dr. Trujillo received the M.D. degree at the National University of Buenos Aires Medical School and served his internship and residency at St. Joseph Hospital, Kansas City, Missouri. He has been associate in research, experimental pathology, City of Hope Medical Center, Duarte, California, and was a fellow in pathology at MDAH before his staff appointment.

**Famed Immunologist Joins Staff**

One of the world's most highly esteemed immunologists, Dr. John Richardson Marrack, has joined the MDAH staff as immunologist and acting chief of the section of immunology, department of biology.

Dr. Felix L. Haas, head of the department of biology, made the announcement of Dr. Marrack's appointment jointly with Dr. R. Lee Clark, Director and Surgeon-in-Chief.

"Dr. Marrack's endeavors have greatly increased knowledge of immunological sciences," said Dr. Haas, "and Dr. Clark and I are extremely pleased and honored that a man with such scientific stature has come to work with us."

Dr. Marrack received his education at the University of Cambridge and the London Hospital Medical College, from which he was graduated in 1912. From then until 1919, he was lecturer in chemical pathology at Cambridge. From 1919 until 1952, he was connected with the London Hospital Medical College, first as lecturer and then as professor of chemical pathology. He became professor of chemical pathology at the University of London in 1931, and served as chemical pathologist at London Hospital from 1919 until 1952.

For the past eleven years, Dr. Marrack has been engaged in research in the department of pathology at the University of Cambridge, England. He is emeritus professor of chemical pathology at the University of London, an honorary, lifetime appointment.

Dr. Marrack has published numerous papers relating to immunology. His investigative abilities and research have been long recognized as fundamental to the development of the science; in fact, he has been called the "father of modern immunology" by many noted scientists.

**National Officer Named**

Mr. Paul W. Yoder, head of the MDAH personnel department since 1948, was named president-elect of the Hospital Personnel Management Association. The announcement was made at the Association's national convention which was held October 23, 24, and 25 in Houston.

In addition to membership in the Hospital Personnel Management Association, Mr. Yoder is a member of the Houston Personnel Association and member and past president of the Hospital Personnel Association of the Houston area.

Computers play an active role in the life of MDAH. So much so, in fact, that an institutional Program in Biomathematics and Computer Science has been established within the office of research. The purposes of this program are to provide services to MDAH researchers and to undertake independent research directed toward expanding the application of mathematics and computer usage in institutional activities.

**Program Staff**

Dr. Clifton F. Mountain, associate general surgeon (thoracic) at MDAH, is acting chairman of the institutional biomathematics program and is principal investigator of the project, Biomathematics in a Cancer Research Institute, which is supported by the National Cancer Institute.

Mr. Lynn C. Hayward, manager of computer operations, is responsible for the computer facilities, the scheduling of computer time, and the assignment of programming assistance. Dr. Reimut Wette, assistant biometrician in the office of research, is the senior biomathematical consultant.

**Units of Program**

Units of the newly established program include the following: Biomathematics, through which assistance is available on experimental design, statistical techniques, and mathematical models; and the Computer Science Laboratory, where assistance is offered for programming the computers and other data processing equipment.

In 1959, MDAH installed an IBM 305 RAMAC computer for administrative and epidemiological research. This was the first fully automatic electronic facility in a hospital setting. In February, 1962, a laboratory for scientific computation was established and an IBM 1710/1620 electronic computer system was installed. In April, 1963, the IBM 1401 (which has the largest storage capacity of any 1401 in the Houston area) was added to the computer facility to meet the rapidly developing needs at the institution for computation and data retrieval. This second computer made enough computer time and space available for the analysis of experimental results to encourage the insti-
The practical applications of the computers at MDAH are many and varied. Business office calculations are performed on the computer. The department of epidemiology utilizes computer time in analysis of data in clinical and epidemiological research. A system of information retrieval is being developed by an ad hoc committee including representatives from the computer science laboratory, office of education, medical library, and departments of epidemiology, pathology, and physics. A method has been perfected by researchers from the departments of radiology and physics for the determination of explicit distribution of radiation in interstitial implants for treatment for carcinoma. The section of genetics has a person assigned full-time to the Computer Science Laboratory, working to determine linkage relationships in chromosomes.

A use of the computer unique to a hospital and of much general interest is the adaptation of computers to patient monitoring during surgical procedures. At predetermined intervals, the computer checks a patient's blood pressure, temperature, pulse rate, and respiration. This provides constant, accurate information, and allows the anesthesiologist to enlarge the scope of his activities in caring for the patient. This application of computers is being intensively studied at MDAH in an attempt to perfect the system and perhaps make its use standard procedure.

Staff Publications


