An Institute of Radiology has several significant responsibilities; and many of the articles in Focal Spot are a report about these responsibilities. For example, in almost every edition there are articles about students who are beginning or ending their training and it is a primary responsibility of the Mallinckrodt Institute to train diagnostic radiologists, radiation therapists, nuclear medicine physicians, physicists, oncologists, and technologists.

Another major responsibility is to develop new radiographic methods and improve on established techniques of radiological patient care. Radiology at the Institute is constantly changing and developing. New approaches to the radiological diagnosis and treatment of diseases are a part of our lives. I would like to list a few of the new procedures and techniques which are now available at the Institute that have been initiated during the past few months. Some of these techniques were developed at the Institute and are now being used nationally; others are new to the Institute but were developed at other radiological centers and our responsibility is to implement them locally. All are the result of cooperation between radiologists, technologists, physicians in other specialties, scientists, and engineers.

Radiation Oncology — The Radiation Oncology Clinical Division has developed and put into operation a new "blocking" system. This system allows the development of metallic blocks to shield normal tissues in patients undergoing radiation therapy. This new system allows shields to be made specifically for each patient and are used in conjunction with a radiation therapy simulator. The simulator and blocking system make it possible to design a specific treatment plan according to the individual needs of each patient.

Nuclear Medicine — During the past several months, the following clinical procedures have been developed in this division:
- Gallium Scans — This isotope localizes in certain malignant tumors and in an area of infection. This examination is of particular use in patients who are suspected of infections following surgery and localization of the infection is necessary.
- Gallium-67 — Whole body scan in a patient with lymphoma demonstrating increased uptake in several areas of tumor tissue. These include the axillae, the mediastinum, the spleen, and pelvic lymph nodes.
Constantly Changing

Isotope Angiocardiography — This technique holds great promise in diagnosing heart abnormalities in adults and infants. It will be of particular use in small children where information can be obtained prior to more complicated radiographic and pediatric procedures.

Renal Transplant Isotope Studies — A series of isotopes are used to study the patient who has undergone the transplantation of a kidney. The results from these isotope tests can often define the transplanted kidney’s function and is of great help when the transplanted kidney is not working properly.

Diagnostic Radiology — A new method for diagnostic studies is now routinely available at the Institute, Abdominal Untrasound. Ultrasound uses high energy sound waves in a manner similar to sonar detection of submarines and these sound waves can detect and record the different organs in the abdomen. This technique can detect abnormalities of the aorta, liver, kidneys, pancreas, and spleen. Ultrasound is often helpful when used with standard x-rays.

Renal Sonogram — Large mass replacing kidney with multiple echos within it indicating the presence of a necrotic tumor.

I will close this article by listing several new diagnostic radiological studies which are now available at the Institute and have been initiated during the past few months. Space does not permit an explanation of each and it is not a complete list: arthrography of total hip replacement, measurement of skin thickness, bone mineral mass measurement, removal of common duct stones and biopsy of the common duct through T-Tube, magnification angiography, esophageal foreign body removal, umbilical arteriogram, imperforate anus study and genitogram in children.

Renal Sonogram — Large mass replacing kidney with multiple echos within it indicating the presence of a necrotic tumor.

Metallic block used to shield normal tissues in radiation therapy treatments.

The development of new and improved methods requires a faculty and staff who are curious, bright, innovative and never completely satisfied with current methods and techniques. The Institute should always be constantly changing.

Dr. Ronald J. Evens
Director of Mir

"Magazines, Please"

In order to make the patient waiting rooms more enjoyable and comfortable for our many patients and their families, we would appreciate donations of any recent magazines. This is a continuous problem so immediate and future contributions to the reading tables will be greatly appreciated. Magazines may be left in the Public Relations Office on the second floor.
Jean Barbier, Design Engineer for Mallinckrodt Institute of Radiology, has designed a radiant heating device for infant warming during radiography. Since its introduction to the Pediatric 5th Floor of MIR, the unit has been utilized during the examination of many small infants with satisfactory maintenance of body temperature.

It is of great importance to maintain body temperature as close to normal as possible in small infants, as excessive heat loss is associated with a variety of detrimental metabolic effects. Body temperature can drop precipitously during fluoroscopic and other lengthy procedures in an air-conditioned radiology department without some means of controlling the thermal environment of the infant.

The unit consists of two radiant heaters housed in wood cases and placed on either side of the infant. The heaters are connected to a solid state controller which is signaled by a sensing device which is taped on the infant’s skin. With this system there is feedback control of the infant’s body temperature within a range of plus or minus 3/10 C° of the desired temperature.

Before this radiant heater was available in our department infants were warmed with heating lamps, without monitoring of body temperature. Since the system utilizes radiant heat the ambient temperature is that of the remainder of the room and the infant is maintained at the desired temperature without benefit of blankets or clothing. Therefore, in addition to more reliable control of body temperature, the infant remains accessible for easy positioning and close observation of skin color, respirations, and general condition.
Dr. John Forrest and MIR Residents Drs. Bruce Hauser and Anthony Merlis in 2nd floor viewing room.

Approximately 55,000 standard chest examinations are handled annually by the Chest Radiology Service under the co-direction of Drs. John Forrest and Stuart Sagel. The chest films are of greatest use in the patient with lung or heart disease, but can also provide clues to problems in other parts of the body and disclose the presence of unsuspected disease such as tuberculosis or cancer. About 1000 chest laminograms or fluoroscopic examinations are done yearly to better evaluate abnormalities detected on the standard chest radiograph.

Located on the 2nd floor of Mallinckrodt, the Chest Radiology Service performs approximately 500 special procedures each year. The majority of these are bronchial brush biopsy and needle biopsy of the lung; two newer diagnostic modalities used to determine the definitive pathologic etiology of a pulmonary lesion seen on the plain film. Positive results often direct appropriate antibiotic or chemo-therapy, and may obviate the need for surgical treatment.

Both procedures are done under local anaesthesia using fluoroscopic guidance. In bronchial brushing, the pulmonary lesion is reached by inserting a catheter through the neck into the trachea and then positioning the tip of the catheter into the abnormal...
radiographic density. A flexible nylon brush is passed through the catheter and specimens scraped from the lesion which are then sent for appropriate cytologic and bacteriologic studies. With needle biopsy, the lung is punctured using a direct percutaneous approach; under fluoroscopy the needle tip is positioned within the pulmonary lesion, tissue samples are obtained and sent for pathologic study.

Also under the co-direction of Drs. Forrest and Sagel is a satellite area of Chest Radiology located in the Barnes East Pavilion where each of the approximate 50 patients admitted daily to the Barnes Medical Complex has a chest x-ray. A $125,000 radiology unit, designed especially for Mallinckrodt and Barnes, automatically produces a completely developed radiograph in 90 seconds. The only such unit in St. Louis, the sleek machine takes and develops the film so that it is “untouched by human hands”. The film is interpreted by a radiologist and his report often precedes the patient to his room and is immediately available to the physician.

More efficient patient care and service is the result of this process as it eliminates the shifting of patients and their records from one area to another.

Medical students taking the Radiology elective spend 2 to 3 weeks with the Chest Radiology Service. Here they are taught basic principles of radiology, attend lectures and quiz sessions, witness special procedures, and actively participate in the interpretation of the daily films. Second floor facilities include two large reading rooms where there is constant staff supervision of film interpretation. A one hour conference of proven pathologic cases is held each morning for the MIR residents and medical students on the Chest Radiology Service in addition to a daily consultative conference for the Department of Medicine. A weekly conference in Scarpellino Auditorium is conducted by the Chest Service for the entire Medical Center.
BEHIND THE SCENES

Behind the curtain of every successful stage play there exists a group of individuals called the 'stage crew' who construct the sets, alter the lighting, change the scenes and, all in all, help to create the environment necessary for a successful production. Though seldom noticed, their contribution is of major importance.

In Mallinckrodt, the stage crew working behind the scenes is our dedicated maintenance department who, with their experience and knowledge of the complexities involved in maintaining highly technical x-ray equipment and constantly improving building facilities qualify them for the title of "unsung heroes". Their prompt and efficient delivery of maintenance service has helped MIR to achieve its goal of supplying the best possible patient care.

Mr. Armand Diaz, Technical Administrator of MIR.

Since the arrival of Armand Diaz, R.T., in 1968 as Technical Administrator of MIR, a 2 man general maintenance operation has been expanded to a highly-skilled, technical crew of nine artisans. These persons are Vince Lazzari, Supervisor of Maintenance; Clarence Emerick, Assistant Supervisor; Jim Barnes, Service Technician; Eddie Sattelfield, Xomat Service; Carl Pettit and Joe Chandrl, General Maintenance; Roy Ragan, Carpenter Supervisor; Bob Shaw, Carpenter; and Glenn Fieweger, Painter.

Their handiwork, which can be seen on every floor from the sub-basement therapy lead workshop through the 12th floor shell space, runs the gamut from building magazine racks to changing room partitions to redesigning and remodeling new, modern x-ray rooms and offices.

New radiographic-fluoroscopic room on 4th floor.

Vince Lazzari replaces counter balance cable within the radiographic table in 4th floor G.I. examination room.
Clarence Emerick solders and repairs circuitry in the fluoroscopic spot film device on 4th floor.

Jim Barnes installs new x-ray tube on 3rd floor Polytome unit.

Eddie Sattelfield adjusts the washrack drive-chain tension within the x-omat.

Carl Pettit and Joe Chandrl place plywood over water tower grill to prevent freezing.

Roy Ragan, right, and Bob Shaw in carpentry shop transform carpentry materials into next remodeling project.

Glenn Fieweger in 11th floor paint shop.
Another very important area of Maintenance is the Laundry Department located on the 11th floor. From here, Hilda Meyer and Patricia Hogan supply and pick up all the laundry needs of the bustling, busy radiological Institute. A vital part of patient care and service, they are responsible for marking, distributing to every floor laundry supplies such as floor and tray linens, patient gowns and pajamas, employees' smocks, uniforms, and “white coats.”

Photographed in newly-remodeled laundry room on 11th floor, Hilda Meyer and Patricia Hogan sort and stack on shelves a day’s supply of laundry to be distributed throughout the Institute.

In a situation involving malfunctioning x-ray equipment, where previously there was a delay of several days in obtaining outside service help, it is now handled within two hours or less by service technicians available at all times within the Institute. Thus, the patient is spared the discomfort and inconvenience of delayed radiological treatments. Without immediate maintenance service, patients must be shifted to other x-ray rooms to complete their examinations resulting in additional burden on the room and delayed completion of the examination for several hours and in some cases, such as special procedures, even several days.

Well-directed and concentrated maintenance team effort in renovating and updating the department to meet the more demanding standards of today’s radiological health needs results in a reduction of at least 50% of the work time and cost involved.

How are they able to work twice as fast as their outside counterparts? The answer involves careful planning, determination, and experience. Determination in that when these fellows set out to do a job they are determined to complete it in as short a time as possible. They set their own pace and it is usually “blistering”. When considering experience as a key factor in their effectiveness one immediately recognizes that each of the maintenance men is a seasoned veteran. Together they represent over two centuries of work experience, which in turn has given them insight into the complexities and sophistications of the many and varied types of equipment located throughout MIR. By coupling the factors of pre-planning, determination, and work experience, it is predictable that the logical yield will be extreme productivity.

To achieve maximum utilization of the maintenance department it has been necessary to establish rigid policies regulating work requisitions. All such requisitions must now be channeled first to the office of the Technical Administrator who then sorts and dispatches them according to priority. This system has succeeded in relieving the maintenance men of having to spend large amounts of time on the telephone, answering pages, as was the case before the dispatching system was initiated.

In the five years since 1968, Roy Ragan and Vince Lazzari and their co-workers have left their trademark in virtually every area with 80% of the Institute either remodeled or replaced — a commendable feat when one considers the vast size of MIR.
Dr. William E. Powers

to be Deputy Planning Director

of New Federal Cancer Center

Dr. William E. Powers, Radiation Oncology, appointed Cancer Center Director.

The National Institutes of Health has announced a major cancer treatment center to be built in the Barnes Medical Center in the near future. Dr. William E. Powers, Director of MIR’s Radiation Oncology, has been named deputy planning director.

Under the federal government’s “Act for Conquest of Cancer”, a two-year grant of $170,753 from the NIH has enabled planning to begin on the comprehensive cancer center.

Expected to cost some $12 to 15 million when completed, the facility will be housed in various parts of the medical center and directed by Dr. Samuel B. Guze, Vice Chancellor for Medical Affairs, Washington University. In an effort to defeat cancer, which is responsible for one out of every six deaths in the United States, 15 such centers will be established in various regions of the United States.

ONCOLOGY ANNUAL REPORT

The Radiation Oncology Research and Treatment Program under the direction of Dr. William E. Powers and staffed primarily by personnel from MIR’s Division of Radiation Oncology, will be publishing its first Annual Report describing in detail the clinical, research, and teaching functions of the Program. It is presently envisioned that some 3500 reports will be available for distribution to clinicians, research investigators, students, and other interested parties. Through this communication medium, individuals interested in Oncology will be kept informed of the most recent developments resulting from the combined efforts of the Program personnel.

The 35 MeV Accelerator Arrives!

January, 1973, the Linear Accelerator is lowered for installation into the MIR Ground Floor new addition.

In 1966, an anonymous donor provided funds for the purchase of MIR’s 35 MeV Accelerator to be used for clinical care of patients with cancer and research studies.

Now that construction and testing of the unit at the factory in Palo Alto, California have been completed, development of the operating characteristics of the unit will begin at MIR. The unit is an advanced “state of the art” unit with flexibility, maintainability, and reliability unmatched in previous therapy equipment. The development has taken into account the requirements for clinical radiation therapy — providing a unit with a variety of capabilities for both x-ray and electron beam therapy with large fields with uniform dosage across the entire beam and with rapid and precise set-up and operation.

Presently being installed in MIR, the 35 MeV Accelerator, in addition to its usefulness for clinical patient care, can be operated in a research mode with extremely high dose rates sufficient for biological investigations and for the production of short-lived isotopes.

Testing of the unit, which costs approximately $800,000, is expected to begin within a month and clinical utilization within 4 months.
MAMMOGRAPHY - ROENTGENOGRAPHIC
METHOD FOR DETECTION OF BREAST CANCER

On January 10, 1973 Miss Nancy Power, mammography technologist specialist from the manufacturer of the Senograph, spent the day at MIR demonstrating techniques and use of the unit to MIR technologists, Misses Judy Cortner, Diane Lloyd and Sharon Genetti. Of particular note that day was the detection of a clinically unsuspected carcinoma of the breast in one of the patients studied.

Dr. Albert E. Hesker, Director of MIR Mammography Service.

Dr. Albert E. Hesker, Director of the Mammography Service, notes that breast cancer is the most frequently occurring carcinoma in women, with the disease affecting about 1 out of every 18 or 19 women born in the United States. About 70,000 cases are diagnosed each year in this country according to the American Cancer Society. Mammography can detect the presence of carcinoma in some cases which are negative to physical examination by the woman herself or her doctor. Such early diagnosis of this tumor implies a better chance for proper treatment and cure of the disease. Mammography is also of value with preoperative evaluation, surveying those patients who are difficult to examine clinically, screening of patients with hereditary factors placing them at a greater risk to develop breast cancer, in the follow up of patients with equivocal findings, or following surgical removal of the breast on one side.

Senograph unit designed for mammography of the breast.

Mallinckrodt has recently installed a new unit, the Senograph, on the second floor of the Institute which is specifically designed for soft tissue radiography of the breast. The unit emits a relatively homogenous radiation spectrum having a wave length that is optimal for soft tissue contrast imaging. It also allows the use of film designed for automatic processing which expedites patient examination and reporting procedures. Advanced scheduling therefore is no longer required and the examination is now offered on a routine basis to both inpatients and outpatients. Generally two views of the breast are obtained at right angles to each other along with an oblique view of the axilla or underarm area. Both breasts are routinely studied in this fashion and the exam requires about 10-15 minutes per patient.

Miss Nancy Power, center, demonstrates Senograph Unit to MIR Technologists (left to right) Misses Diane Lloyd, Elaine Beckman, and Judy Cortner.
In a nuclear medicine department using a gamma camera, or two or more cameras, considerable time is spent changing the collimators and much space is used in storing them. Most of the “down-time” in changing the collimator arises from the time taken to raise and lower the gamma camera head to match up with the collimator stand and in moving collimators about on their awkward triangular frames.

The MIR Nuclear Medicine department has two Pho-Gamma cameras located in the same large room, with eight collimators in the adjacent corridor. Anxious to devise a system in which the collimators occupied as little space as possible and could be transported and raised or lowered to the appropriate position swiftly, Leo Lopez, R.T., Technical Supervisor of Nuclear Medicine, and Jean Barbier, MIR Design Engineer designed and built a vertical collimator storage rack (Fig. 1) 48 inches high, 26 inches wide and 24 inches deep, with eight shelves, one for each collimator, and constructed of steel angles.

The collimator transport system, operated by simple controls, consists of a commercially available hydraulic lift (Fig. 2) modified to carry a collimator, battery operated and recharged overnight to insure reliable operating conditions.

When in operation, the hydraulic lift, under its own power, is moved to the collimator rack and appropriate shelf where the collimator is lifted off the shelf and moved to the gamma camera. The base of the hydraulic lift has been designed to fit precisely between the stand of a Pho-Gamma camera so that when the collimator has been raised to meet the camera face and is secured, the fork is lowered and the device moved away (Fig. 3).

The Nuclear Medicine Department reports that the machine and storage rack have resulted in a considerable saving of “down-time” on the two gamma cameras and an elimination of clutter in the corridors caused by the old triangular collimator carts!
Dr. William McAlister, Chief of the MIR Pediatric Department, has been elected President-Elect of the Missouri Radiological Society at the Society’s recent meeting in St. Louis. Dr. Ronald G. Evens, Director of MIR, will serve a second year as Secretary-Treasurer. The Missouri Radiological Society is the State Chapter of the American College of Radiology and its purpose is to establish and maintain the highest medical and ethical standards in the practice of radiology.

Dr. William McAlister has been appointed Chief Resident for 1973-74 and Dr. Robert Bramson Co-Chief Resident. They will be working closely with MIR’s Director, Dr. Ronald Evens and Dr. Jack Forrest who is responsible for resident education in planning future resident training activities.

Dr. Robert Stanley delivered a paper on the “Use of Arteriography in Acute Gastrointestinal Bleeding” to the Central Surgical Society Meeting in Toronto, Ontario, on February 22.

The MIR Residency Program Bulletin has recently been revised by Gary D. Shackelford, M.D., in cooperation with Dr. Ronald Evens. The Bulletin is now available for distribution through Dr. Evens’ office.

MIR staff members who lectured at the Missouri State Medical Association Meeting at the Chase Park Plaza Hotel on March 29 through April 1 include Tom W. Staple, M.D., “Radiology of Total Hip Replacement” and Gary D. Shackelford, M.D., “Roentgen Approach to GI Obstructions in Children”. A panel on radiology was moderated by Dr. William H. McAlister.

RECENT PUBLICATIONS


Acting as Chairman of the Board, 4th District, Missouri Society of Radiologic Technologists, Armand Diaz has succeeded in acquiring for the Society a Fellowship for Continuing Education. The Fellowship will be funded by the Mallinckrodt Chemical Works Company and will be used each year to send one student technologist and one registered technologist to the State and National Conventions respectively.

Tony Raia, student technologist, has been selected to operate the newly equipped Ultrasound Laboratory located on the eighth floor of the Institute.

In a recent interview concerning the School for Radiologic Technology, Armand Diaz stated that the number of people applying for admission to the School during the past few years had increased at an astounding rate. Five years ago there were only seven applicants for the school while today that number has grown to well over one hundred. Mr. Diaz stated that although this has made the task of selecting students more demanding, it has also fortunately provided the opportunity of selecting only the highest caliber students for admission to the program.

Douglas Hausenbauer, MIR technology student, has been elected president of the Student Committee of the M.S.R.T. This committee is affiliated with the State Society of Radiologic Technologists and is composed of three students from each of the six districts in the state.

Gary Brink has written the editorial for the current issue of Applied Radiology. The editorial, entitled “Four Years for What?”, addresses the issue of educational standards for radiologic technologists interested in pursuing a career in radiology administration.

At the March meeting of the Fourth District, Missouri Society of Radiologic Technologists, Dr. Robert Francis provided the lecture for the evening entitled, “Renal Angiography”.

IN THE MERRY MONTHS OF MAY, JUNE & JULY WEDDING BELLS WILL CHIME

MIR has a host of spring and summer weddings on the agenda. Technologists Sharon Genetti and Mike Albertina will be married on May 5th.

May 26th is the wedding date of Diane Lloyd, Junior Staff Technologist, and Richard Harris, a Pre-Dental Student at University of Missouri, St. Louis.

Wayne Winney, Student Technologist, and Sue Kitsch of Kirkwood, Missouri, will be married on June 16.

Carol Schmidt, Queeny Tower receptionist, and Ronald Fry, employed by the Rock Island Lines Railroad, plan a July wedding on Friday the 13th.

Second floor receptionist Barbara Schilling and Chuck Kehnast, Junior Staff Technologist will have a July 14th wedding.

Jerry Moser, Student Technologist, and Dianne Mruzik, Legal Secretary, plan a July 20th wedding.
MIR CARDIAC SECTION
AIDS SURGEONS
AND CARDIOLOGISTS

The Cardiac Radiology Section, under the direction of Dr. Nikolaus Schad, performs all angiographic procedures on children and adults with congestive or acquired heart disease. Large film angiograms and cine 35mm film of adult patients are reviewed and discussed in several afternoon conferences with the adult cardiologists. In addition, there is one working conference per week during which all the adults and children who should have surgery of the heart are extensively discussed with the cardiac surgeons. In a teaching conference for fellows, residents, and students, singular cases are presented with subsequent discussion of the particular disease and its treatment.

A unique service is provided for the surgeon. Before going to the operating room he is able to view films of his surgery cases in the third floor Cardiac Room. For these purposes all the cine films from the last two years are kept in chronological order in cabinets in the viewing area so that they are immediately at hand. Every patient also has a teaching or working file in which the hemodynamic data and anatomical findings of the heart, valves, and coronaries are recorded. The above material is demonstrated to the surgeon and is available even in emergency situations. This system has been developed to provide the best possible service to the patients and physicians of Barnes and Children’s Hospitals.

Assisting Dr. Schad is Dr. Robert C. McKnight.

CANCER LAB AND LECTURE SERIES WELL RECEIVED

The Section of Cancer Biology is now in the middle of its 12-week lab and lecture series in cancer biology. A three-armed approach to cancer education, the first is a series of specific lecture topics: Radiation Biology, Cell Population Kinetics in Normal and Tumor Tissues, Cancer Chemotherapy, Immunobiology, and Cell and Molecular Biology. Second, a set of laboratory exercises has been designed to present important concepts in Oncology. Finally, informal discussion sessions are set up on these labs and lectures to correlate this information with its clinical application and future potential.

Taking the full-time course are Dr. Fred Zivnuska, a resident in Radiation Oncology; Drs. Lily Palmer-Hanes and William Mill, both members of the Radiation Oncology staff; Dr. Carol Williams, a Gynecologist and Oncologist in the St. Louis community; Dr. Aly Razek, a fellow in Pediatric Oncology at St. Louis Children’s Hospital and Mark Edelstein, an M.D.-Ph.D. student who is pursuing his Ph.D. in the Department of Radiology. Dr. Fred Valeriote reports, “This course has been well received by the academic community interested in cancer and we expect to expand the enrollment next year.” Some of the lectures are available to interested individuals who are not enrolled in the total program; for example, the series in Radiation Biology is attended by Radiology residents from Homer G. Phillips and St. Mary’s Hospitals.

VIDEO PATIENT
REPOSITIONING SYSTEM

The problem of patient repositioning on successive days of radiation therapy treatment is a critical one. To facilitate this patient positioning, members of the physics staff, Dr. Don Ragan and Dr. George Oliver, are testing a new video (television) disk system. Operation will consist of positioning the patient on the simulator (this allows accurate positioning of the patient under simulated treatment conditions with the aid of x-ray fluoroscopy) and using a fixed TV camera to record the image of the patient on a video disk. The patient may then be transferred to a therapy machine equipped with a TV camera in the same relative position to the treatment table as in the simulator. By subtracting electronically the patient’s image from the recorded video disk image the patient may be moved under direct TV vision of the subtraction process until he is in exact registration with his previous position. This operation is easily performed and results in a blank monitor when the patient is in the same position as under the simulator. If the patient moves during treatment the screen will no longer be blank and the monitor will present a double image of the patient and treatment may be suspended while the patient is repositioned.

It is expected that this system will provide both more rapid and reliable positioning of the patient and easier operation than accomplished by present systems.
MIIR Hosts
"Varian Users' " MEETING

Varian Associates, a Palo Alto concern, held its Radiation Division's 4th Clinic Users' meeting in St. Louis on March 29-31, 1973. Host for the meeting was Mallinckrodt Institute of Technology.

Organized for the purpose of exchanging ideas on the optimum utilization of linear accelerators in radiation therapy, these meetings have always been part educational, part controversial, and very unique, both in the subject matter covered and in the level at which it is covered. By providing an interchange between physicists, therapists, and engineers regarding the best use of therapy equipment, this meeting has established itself as one of significant value to radiotherapy accelerator users.

Among the topics on this year's program were a symposium on accelerator dose distribution and a session devoted to the use of computers for preventing or minimizing errors in a radiation therapy department. Dr. William E. Powers of Mallinckrodt served as moderator for most of the sessions and all papers were presented by therapists and physicists familiar with the operation and maintenance of linear accelerators.

In attendance this year were 150 people from throughout the United States, Canada, Japan, Sweden, England, and other foreign countries.

NEW PROCEDURES
IN BONE AND
JOINT RADIOLOGY

In an on-going effort to provide better diagnostic services and applications of diagnostic procedures for patients, the section on Bone & Joint Radiology, headed by Dr. Tom W. Staple, has developed or improved upon two new procedures.

Dr. Tom W. Staple,
Director,
Bone and Joint Radiology.

Total hip replacement is a new orthopedic procedure in which both surfaces of the hip joint are replaced by plastic or metallic appliances. One of the complications of this type of surgery is infection. If infection is suspected, it is necessary to aspirate the area of the prosthetic hip joint in order to obtain specimens for bacteriologic diagnosis. At the same time, contrast material can be injected around the prosthesis to determine whether any portion has come loose from its attachment to bone. If such loosening has occurred, it is often an indication that the operative site has become infected. The members of the Bone & Joint section perform aspiration and arthrography with fluoroscopic control and have developed a number of refinements in filming of the prosthesis before and after arthrography. As a result, a much better visualization of the prosthesis and more accurate aspiration of the joint has been achieved.

The section has also developed more refined techniques of bone biopsy. A complete armamentarium of biopsy needles has been acquired. The techniques have been improved upon and can be performed under more adequate x-ray control in the x-ray department than in the operating room. We have gained a knowledge and expertise which makes the performance of this procedure much less time-consuming and more accurate than could previously be attained.

The introduction of these two new procedures states Dr. Staple, "is a part of our section's policy of actively involving itself in as many aspects of the patient's diagnosis and treatment as possible."

Summer Clerkship
in
Cancer Biology – Radiation Oncology

ORGANIZED BY THE SECTIONS OF CLINICAL ONCOLOGY AND CANCER BIOLOGY, DIVISION OF RADIATION ONCOLOGY, MALLINCKRODT INSTITUTE OF RADIOLOGY, WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
ST. LOUIS, MISSOURI

A three-month full-time clerkship program is offered to freshman medical students for the purpose of acquiring basic knowledge in laboratory investigations concerned with tumor and normal cell population kinetics, the effects of ionizing radiation and chemotherapeutic agents on normal or malignant cells and basic immunological concepts of cancer. Students will participate in clinical activities and observe patients being treated in the Division of Radiation Oncology and the Oncology Section of the Department of Pediatrics. In addition to basic concepts in the management of cancer patients, students are introduced to the principles of physical diagnosis. A close interaction between clinical and research sections which makes possible correlation of biological concepts and clinical activities is maintained throughout the program.

For further information, contact
Carlos A. Perez, M.D.
Section of Clinical Oncology
Sta. 3381, 3481

Fred Valverio, Ph.D.
Section of Cancer Biology
Sta. 3214

STIPEND - $400 a month – Application Deadline: March 31, 1973 – Limited Enrollment (12 Students)
NIGHT PEOPLE

Assisting Jack Curtin are Technologists Jim Sutton (full time) and Al Coffman (3 evenings), a first and second year student, and two students assigned to 2nd x-ray from 1700 to 2100 to assist with all patients and whatever area needed. MIR students are most cooperative and willing to work the evening shift because of the comprehensive experience gained from the diversity of the work schedule.

Jack Curtin, R.T., Technical Supervisor of the MIR Night Shift compares his staff to a "Good Stew". "Any type x-ray requisition thrown at us - from an auto accident to a femoral arteriogram to a barium enema to a gunshot wound to a child with pneumonia or fever and convulsions to an expectant mother requiring pelvimetry films to the gamut of emergency and operating room patients to a routine chest exam - we'll undertake with one objective in mind - to give the patient a thorough, accurate x-ray examination". Concentrated team effort is required as they carry on MIR's responsibility to provide the hospital with 24-hour radiological service.

Rita Calcaterra, 2nd year technology student, moves stretcher patient from waiting room area to examination room.

Frances Winzen, Evening Receptionist

Frances Winzen, (Fritzie), evening receptionist for 3 years, coordinates the flow of patients and requisitions into the 2nd floor, dispenses phone calls, types reports, and assists with patient needs.

In the film processing area is Tommy Reece, Darkroom Technician. After the floor technologists place the flashed film in the passbox (connecting Flash Room and Dark Room), Tommy runs them through the X-omat for processing.
Film Librarian Mary Hughes finds her shift from 1600 to 2400 hours goes by quickly as she sorts all new film, maintaining a smooth flow of films from the processing to the viewing area; makes available previous film on patients for comparison with new film; and assists physicians who come to 2nd X-ray in need of present or old films — which she gathers from 1st floor film library, 2nd floor film area, or 5th pediatric floors.

From 5 P.M. to 8 A.M. two radiology residents are on duty for performing special procedures and for wet readings of film on pre-operative and emergency room patients.

Jack Curtin reports “the evening shift takes care of about 75 patients nightly with a peak evening of 126 patients. All of us are still trying to break that record!”

At midnight or 2400, the evening shift turns over the hospital complex to “Charlie” — Charlie McGill, that is — Charlie is blessed with strong legs as he takes care of some 15 to 28 patients via the portable x-ray unit in the Operating Room, Emergency Room and Pediatrics. All for one, one for all — maybe not the Musketeers but the Night People possess the same good team spirit!

Bob Ray, R.T., Assistant Supervisor of 2nd floor, has the distinction of being one of eight in his family who are in the field of medicine. A member of the MIR Technology staff for 3 years, Bob lives in Hillsboro, Illinois with his mother, Mrs. J. H. (Clementine) Ray, who is a registered nurse at Fayette County Hospital, Vandalia, Illinois, and his father, a retired machinist.

Bob’s oldest brother, Joe Ray, is a laboratory and x-ray technician in the Link Clinic, Mattoon, Illinois, and his sister, Jo Ann Harmon, is a registered nurse in Bethalto, Illinois.

Another brother, Louis Ray, is a nurse anesthetist at Mount Vernon’s Good Samaritan Hospital where his wife, Jann, is a registered nurse and nursing instructor.

Ralph, a younger brother, is a registered nurse at Northwest Christian Hospital in Florissant, Missouri, and works with the L.S.V. (Life Support Vehicle-ambulance equipped for any emergency.)

Bob’s youngest brother, Paul, is a student pharmacist in the St. Louis College of Pharmacy and works part-time at Northwest Christian Hospital.

When someone is not feeling well in this family, Bob says there is all sorts of advice — even including, “Take two aspirin and call me in the morning.”

Marqua McGull, daughter of Barbara McGull, Second Floor Film Librarian, has been accepted in the Law School of Northwestern University. She will enroll in the Fall of 1973 after graduation from St. Louis University in May.
FOCAL SPOT MOBILE NEWS VEHICLE is ever on call for "on the scene" coverage of MIR news.

NEW ARRIVALS

Dr. and Mrs. M. Reed Knight announce the birth of Joanna Kathryn on February 6, 1973. Dr. Knight reports that their 2 year old daughter, Allison, even "likes her new sister!"

John Vincent Pretti was born December 19, 1972 to Mr. and Mrs. Pete Pretti. John’s mother, Chris Pretti, is a radiation therapy technologist.

Dr. and Mrs. Robert Bricker (Dr. Mary Poncel) announce the arrival of a son, Timothy Joseph Bricker, February 4, 1973.
M.I.R requests the pleasure of your company at a Creative Art Exhibit located in the Lobby of Scarpellino Auditorium.
We are pleased to welcome to Mallinckrodt ......

Dr. James A. Purdy, Instructor of Radiation Physics, is a native of Tyler, Texas. After three years of military service with the U.S. Marine Corps, Dr. Purdy received his B.S. degree from Lamar University, Beaumont, Texas, and his M.A. and Ph.D. degrees from the University of Texas at Austin. He is a member of Sigma Pi Sigma and Phi Kappa Phi. Both Dr. Purdy and his wife, Marilyn, enjoy "a good game of bridge" and with their children, Katherine, 6 and Laurie, 4½, they live in Chesterfield, Missouri.

Helene (Lanie) Zimmermann Hill, Ph.D., Associate Professor of Radiology, Section of Cancer Biology, came to MIR from Denver, Colorado, where she was Assistant Professor of Biophysics and Genetics at the University of Colorado Medical Center. A graduate of Smith College, Dr. Hill received her Ph.D. in Biology from Brandeis University, Waltham, Mass., and spent two years of Research Fellowship in Bacteriology and Immunology at Harvard Medical School. Dr. Hill, who has an extensive list of publications and abstracts, is listed in American Men and Women in Science, 1972; Who's Who in the West, 1973, and is a member of Sigma Xi, American Association of University Professors, and numerous other scientific societies.

Her family includes her husband, Dr. George J. Hill, II, Professor of Surgery, Washington University School of Medicine, and four children ranging in age from 8 to 19. In spite of her busy schedule, Dr. Hill manages to find time for hiking, skiing, sewing, and making wine.


Dr. Bharath Kumar, a native of Ceylon, attended Andhra Medical College in India, spent one year internship at King George Hospital, India, and one year at Doctors' Hospital in Washington, D.C., where he also took his residency training.

Dr. Alvin Korba, a first-year trainee from Brooklyn, New York, attended the University of North Carolina and received his medical education at the Medical University of South Carolina.

Dr. Robert Bevier, also a first-year trainee, is a native of Brookfield, Missouri. He received engineering degree from Purdue University and attended the Medical University of South Carolina.

Margy Hojjati, secretary to Dr. George D. Oliver, Jr., is a native of St. Louis, and attended Washington University and Pembroke State University in North Carolina. She lives with her daughter, Mahtaub (which means “Moonlight” in Persian), age 7. Margy has previously worked as a librarian in North Carolina and St. Louis, has an avid interest in the Ballet, attends the Symphony regularly and is an active member of the Friends of the Art Museum and Friends of the Garden.

LONDON PHYSICIST VISITS MIR

Terry Jones, Master of Science Physicist from the Cyclotron Unit of the Hammersmith Hospital in London, England, is visiting the Department of Radiation Physics in MIR for six months on a Medical Research Council Travelling Fellowship. Dr. Jones attended the University of Birmingham and received his Physics Degree from the University of Wales.

The purpose of Dr. Jones' visit is the mutual interest of Mallinckrodt and Hammersmith in the medical applications of cyclotron isotopes. Upon leaving Mallinckrodt, a six month period will be spent in the cyclotron laboratory of the Massachusetts General Hospital in Boston.

Dr. Terry Jones and his wife, Jacky, have two sons, Gareth, 3, and Evan, 9 months. They are enjoying St. Louis where they find interesting aspects are the Americans' use of leisure time and the actual logistics of living are more organized in the U.S. than in Great Britain. While rugby is his favorite sport, Dr. Jones and his wife particularly enjoy attending concerts in Powell Symphony Hall.