As Washington University Chancellor William Danforth (left) and William Peck, executive vice chancellor for medical affairs and dean of the medical school, look on, MIR Director Ronald Evens cuts a symbolic ribbon and officially dedicates the Mallinckrodt Institute of Washington University Imaging Center.
The Imaging Center: From Research to Reality
The Mallinckrodt Institute of Radiology at Washington University Imaging Center supports collaborative research that will ultimately improve clinicians' and scientists' understanding of the human body.

Partners in Radiology
In a new partnership agreement with the BJC Health System, Mallinckrodt Institute assumes responsibility for diagnostic radiology services at The Jewish Hospital of St. Louis.

2 Spot News

On the Cover:
The Imaging Center is the only facility worldwide where scientists conduct PET and MR research under one roof. The four-floor structure provides a centralized location for the application of this research to medical problems. Photography by Tim Parker.
On November 18, Dr. Joel Bedford presented the Third Annual Leonard J. Tolmach Memorial Lecture — “Chromosomes, The Cell Cycle and Radiosensitivity.” Joseph L. Roti Roti, PhD, associate director of the Radiation Oncology Center and chief of the cancer biology section (left, with Dr. Bedford) and Carlos A. Perez, MD, Radiation Oncology Center director, established the lecture in honor of Dr. Tolmach, a renowned researcher who was professor emeritus of radiation biology in radiology.

NCI Grant Aids Breast Cancer Education

The National Cancer Institute (NCI) awarded Celette Sugg Skinner, PhD, research instructor in radiology, a three-year grant of $358,000 for her proposal for “Breast Cancer Education for Older, Urban, Minority Women.” In the urban United States, there is a high incidence of breast cancer in a large population of older, low-income, minority women. These women infrequently undergo mammography — the best method for early detection of the disease. When breast cancer is diagnosed in its early stages, the prognosis is markedly improved.

As principal investigator, Skinner will develop a breast-cancer education program for women enrolled in two independent living facilities for older adults in urban St. Louis. The program will emphasize the value of early detection and include instruction on promoting screening among peers. One hundred peer volunteers (50 women at Site A the first year, 50 at Site B the second year) will disseminate information and promote breast cancer screening among 600 program participants (300 per site). Skinner will evaluate the program’s effectiveness by measuring changes in the participant’s knowledge about breast cancer and their participation in screening. The project’s overall goal is to increase compliance with breast cancer screening, evaluation, and follow up. A successful program can reduce morbidity and mortality caused by delay in diagnosis and treatment.

Whitaker Foundation Funds MIR Research

Established in 1976, the Whitaker Foundation is a major source of funding for research and education in biomedical engineering. One of the first programs initiated by the Foundation was the Biomedical Engineering Research Grant, a three-year award that helps investigators in the early years of their careers to establish a scientific research track. Competition for the prestigious award is high (more than 300 full applications out of approximately 600 proposals were submitted for the 103 grants awarded in 1993), and MIR researchers are consistently named as recipients.

As principal investigator, Thomas E. Conturo, MD, PhD, assistant professor of radiology, Division of Radiation Sciences, received a $179,830 grant for his project on “Development of Non-invasive Arterial Input Function Sampling for Quantitative MR Perfusion Imaging.” Coinvestigators are Marcus E. Raichle, MD, professor of radiology; Kenneth B. Larson, PhD, research professor of neurology; Joseph J. H. Ackerman, PhD, professor of chemistry; Richard E. Norberg, PhD, professor of physics; Mark S. Conradi, PhD, professor of physics; and S. K. (Victor) Song, PhD, research associate in chemistry.

As a 1993 Biomedical Engineering Research Grant recipient, Eduardo G. Moros, PhD, assistant professor of radiology and chief of hyperthermia physics service, attended the Whitaker Foundation’s 4th Annual Conference for Grantees. The conference provides a forum for the presentation and exchange of information by principal investigators who are working on funded biomedical engineering projects. At the August conference in Salt Lake City, Moros presented “An Ultrasound Array System for Simultaneous Hyperthermia and External Beam Radiation of Superficial Neoplasms.” Coinvestigators for the project are William L. Straube, MS, instructor in radiology; Robert J. Myers, PhD, MD, associate professor of radiology; Eric E. Klein, MS, instructor in radiology; Daniel A. Low, PhD, instructor in radiology; and Bahman Emami, MD, professor of radiology and associate director for research - Radiation Oncology Center.
Heiken Voted Teacher of the Year

Now in its eleventh year, the Annual Senior Residents' Distinguished Teaching Award is presented to the MIR faculty member who has made the greatest contribution to resident education. The award recipient is determined through a nomination and voting process, and the presentation is made at the residents' and fellows' farewell dinner in June.

The 1994 MIR Teacher of the Year is Jay P. Heiken, MD, professor of radiology and cochief of computed body tomography, who has been active in the radiology resident training program since 1983. At the award presentation, Dr. William B. Mehard, speaking on behalf of the senior residents, recognized Heiken for his "excellence in didactic as well as fluoroscopic technique instruction. His demand for excellence in film interpretation is matched by his willingness to work side by side with a resident during an examination." And, as Mehard pointed out, the senior residents were "deeply appreciative of Dr. Heiken's support and encouragement during oral boards preparation."

Past award winners are:
- Dennis M. Balfie, MD 1983 and 1987
- Marilyn J. Siegel, MD 1984 and 1989
- David Ling, MD 1985
- Fernando R. Gutierrez, MD 1986
- Stuart S. Sagel, MD 1988
- Barry A. Siegel, MD 1990
- Franz J. Wippold, MD 1991
- Anthony J. Wilson, MB, ChB 1992

Chief Residents Appointed

Doctors Cynthia K. Rigsby and Sean M. Muldowney were appointed 1994-1995 Diagnostic Radiology chief resident and cochief resident, respectively. Rigsby received her undergraduate and medical degrees from Duke University and completed an internship at the University of North Carolina Hospital, Chapel Hill. Muldowney received his Bachelor of Arts degree in biology from the University of North Carolina at Chapel Hill and his medical degree from the University of North Carolina School of Medicine.

In the Radiation Oncology Center, Daniel Keleti, MD, was appointed chief resident and Astrid E. Morrison, MD, was appointed cochief resident for 1994-1995. Keleti received his Bachelor of Science degree in chemistry and his medical degree from the University of Pittsburgh. He completed an internship at the University of Pittsburgh Hospital. Morrison received her Bachelor of Science degree in chemical engineering and her medical degree from the University of Oklahoma. She served an internship at the University of Oklahoma Health Sciences Center.

ACR Selects Fellows

At the American College of Radiology's (ACR) annual meeting in September, three MIR staff members were among the 157 outstanding clinicians and scientists named as ACR fellows: Doctors Dennis M. Balfie, Jay P. Heiken, and Barbara S. Monsees.

Balfie was chief resident during his diagnostic radiology training at St. Mary's Hospital in San Francisco. He completed a one-year fellowship at MIR and joined the abdominal radiology staff in 1980 as an instructor in radiology. A professor of radiology at the Institute, Balfie is recognized for his work in the radiologic staging of pancreatic and colorectal cancers.

Heiken completed a diagnostic radiology residency at the Columbia-Presbyterian Medical Center in New York and a one-year fellowship in abdominal radiology at the Institute before joining the MIR faculty in 1983 as an assistant professor of radiology. He was named cochief of body computed tomography in 1988. Heiken, a professor of radiology, has been involved in assessing the effectiveness of computed tomography (CT) and magnetic resonance imaging (MRI) in detecting and staging gastrointestinal and genitourinary tract cancers. Since the introduction of spiral CT, Heiken also has been developing clinical applications for the technology.

Monsees joined the musculoskeletal radiology staff in 1980 after completing three years of residency in diagnostic radiology at the Institute and two years of training in pediatrics at St. Louis Children's Hospital. She was named head of MIR's mammography service in 1992 and, in 1993, was appointed chief of the Institute's new breast imaging section. Monsees, an associate professor of radiology, is an effective advocate of the benefits of early detection of breast cancer through screening.

Four former MIR staff members (Doctors Miljenko V. Pllepich, Richard L. Baron, John L. Cieply, and David J. Disantis) also were among the new fellows. The Institute is well represented on the ACR's governing Board of Governors by current faculty members Ronald G. Evens, MD, ACR Board vice-chairman, and Bruce L. McClennan, MD, and by former MIR staffers Philip O. Alderson, MD, and David Davis, MD.
Ammann Named CAO

Dennis L. Ammann, a financial executive with more than 20 years of management experience, was appointed in July as chief administrative officer of the Institute. From his office on the third floor of the Scott Avenue East Building, Ammann directs MIR’s business and accounting offices, electronic and general maintenance activities, the photography laboratory, and the Library/Education Center.

He comes to the Institute from ARA Health Services, Inc., d/b/a Correctional Medical Systems (CMS), a multi-million dollar healthcare services company based in St. Louis.

As CMS’ first financial officer and controller for the past three years, Ammann was instrumental in coordinating the successful implementation of the company’s integrated financial accounting system and centralized transaction accounting service. Prior to his association with ARA, Ammann was vice president of control/planning and financial accounting systems international at Purina Mills.

Medical School Consolidates Patient Billing

In a cost-effective move to improve patient service, Washington University School of Medicine has consolidated the billing and collection operations of 12 clinical departments: anesthesiology, medicine, neurology, neurological surgery, obstetrics/gynecology, ophthalmology, otolaryngology, pathology, pediatrics, psychiatry, radiology (including radiation oncology), and surgery. This cooperative effort should result in lower costs, more satisfied patients, standardization of data collection, and a streamlined system for processing insurance claims.

Prior to the consolidation, each department handled its own billing and collection. Consequently, patients who had complicated conditions requiring care from several clinical areas received separate bills from each of the physician services involved in the case. The new patient-friendly operation, called Washington University Shared Billing and Collection Service (WUSBCS), will ultimately simplify patients’ bills by providing an itemized statement of all charges. Using a new software version for the IDX physician billing system, WUSBCS will provide billing and collection services for approximately 750 Washington University School of Medicine doctors.

Catherine Grady

More than 200 employees from the 12 billing and collection services have transferred to new office space in Washington University’s West Campus building in Clayton. In radiology, nine patient accounts employees remained in the Institute’s East Building and one in the Forest Park radiation oncology office to handle front-end billing: registration, charge audit, and information entry.

According to Catherine A. Grady, WUSBCS associate director for internal operations and former manager of Mallinckrodt Institute’s patients accounts, all departments will not be immediately on the new IDX system. The phase-in will be accomplished over 18 months, with radiology as one of the last to “spin-down” because of its billing system complexity.

Focal Spot Wins Silver Quill

The Institute’s Focal Spot magazine was honored by the International Association of Business Communicators (IABC) with the 1994 Silver Quill Award of Merit for outstanding work in the publications category. The magazine was judged on content, design, writing, editorial standards, and photography. Competition included entries from IABC’s District Four: Illinois, Iowa, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin.
Ten Receive Radiology Editor’s Award

The editorial board of Radiology, a leading radiological scientific journal, presented the 1994 Editor’s Recognition Award to 10 Mallinckrodt Institute faculty members. The journal began the program in 1986 to honor those reviewers who consistently produce scholarly, detailed reviews of Radiology manuscripts. According to Dr. Stanley Siegelman, professor of radiology at Johns Hopkins Medical Center and editor of Radiology, editors’ contributions are “most important to the journal, its authors, and its readers.” The following MIR physicians received the award.

- Dee Claire Anderson, chest radiology
- Harold F. Bennett, abdominal radiology
- James A. Brink, abdominal radiology
- Michael D. Darcy, vascular and interventional radiology
- Marshall E. Hicks, vascular and interventional radiology
- David M. Hovsepian, vascular and interventional radiology
- William H. McAlister, pediatric radiology
- Bruce L. McClenman, abdominal radiology
- Barbara S. Monsees, breast imaging
- Henry D. Royal, nuclear medicine.

Following the Annual Probstein Oncology Lecture, Dr. Carlos A. Perez, director of the Radiation Oncology Center, presided at the unveiling of the official portrait of William E. Powers, MD. Powers, a recognized authority in treatment techniques for carcinoma of the uterine cervix and preoperative radiation therapy for head and neck tumors, was director of the MIR Radiation Oncology Center in the late 1960s and early ’70s. Shown here with the portrait, which will be hung in the Institute’s first-floor conference room, are (left to right) Perez; Zvi Fuchs, MD, chairman of the Department of Radiation Oncology at Memorial Sloan-Kettering Cancer Center and the 1994 Probstein Oncology Lecturer; Mrs. William E. Powers; Powers; Ronald G. Evans, MD, director of the Institute; and Washington University Chancellor William H. Danforth.

Tumor Research Backed by FIRST Award

Carolyn J. Anderson, PhD, assistant professor of radiology, Division of Radiation Sciences, received a $523,885 grant from the National Institutes of Health (NIH) for her study “Labeling of Octreotide with Positron Emitters.” The five-year grant is part of NIH’s First Independent Research Support and Transition (FIRST) Award for researchers who have received no other major grants and are in the first five years of their careers.

Many types of cancerous cells, as in the prostate, breast, and lung, carry receptors for somatostatin, one of the human body’s natural hormones. Anderson and a team of researchers are evaluating whether a manufactured version of somatostatin (octreotide) labeled with a positron-emitting metal, such as copper-64 or gallium-68, will bind to prostate cancer cells containing somatostatin receptors. If binding occurs, the sites will illuminate when scanned with positron emission tomography or single photon emission tomography. Successful research results could help oncologists in the diagnosis or treatment of a wide variety of cancers with somatostatin-like compounds.

Anderson also is principal investigator for a $65,656 Mallinckrodt Medical, Inc./Mallinckrodt Institute of Radiology Collaborative Agreement Grant for the “Evaluation of Tumor-bearing Animal Models in the Assessment of New Radiolabeled Bifunctional Chelate-Octreotide Conjugates.”
IMAGING CENTER

FROM

RESEARCH TO REALITY
Four years ago, a multidisciplinary research center was little more than an entry on the institute's strategic plan priority list. Ronald Evens, director of Mallinckrodt Institute of Radiology (MIR), and key researchers envisioned a centralized resource facility that could support a dramatic increase in radiological research activities. Based on good advice from MIR senior administrators (including Michael Vannier, MD, chief of the image processing laboratory and the catalyst for the imaging center project, according to Evens; Marcus Raichle, MD, professor of radiology and neurology; and Michael Welch, PhD, director of radiation sciences), plans for the renewed emphasis on research was based on MIR's already proven strengths: a tradition of excellence in imaging technology, a major neurosciences team, and a large clinical base of patients as study resources.
On November 11, 1994 (just 18 months after the first turning of the sod), Evens, Peck, and Washington University Chancellor William Danforth officially dedicated the Mallinckrodt Institute of Radiology at Washington University Imaging Center. One of the best equipped multidisciplinary facilities worldwide, the Imaging Center provides centralized resources for the scientific evaluation of imaging technology and for the development and application of advanced imaging systems. Through the merger of positron emission tomography (PET) and magnetic resonance (MR), research at the Imaging Center promises to bring us one step closer to the reality of improved health care for thousands of patients.
THE HISTORY, PRESENT STATUS, AND FUTURE POTENTIAL OF FUNCTIONAL IMAGING

At the afternoon symposium preceding the Imaging Center dedication, a distinguished faculty presented clinicians and clinician scientists with a comprehensive look at the functional imaging modalities of PET and MR. Topics, ranging from new accelerators and imaging enhancement agents to experiences with a multidisciplinary MR center, explained the rapidly emerging use of PET and MR to gain information about human anatomy, particularly the brain and the cardiovascular system.

In his talk, “Development of the New Generation of MRI Scanners,” Tom Miller spoke on the relationship of the economy, clinical needs, and research advances to the development of new MR imaging systems. Miller (right, with Ronald Evens) is MR general manager-worldwide of Siemens AG, Medical Engineering.

Joanna S. Fowler, PhD, is director of the PET facility at Brookhaven National Laboratories. In her talk, “Neuropsycharmacology and PET,” Fowler discussed PET research involving drugs of abuse.

Michel M. Ter-Pogossian, PhD, professor of radiology, led the team of researchers who developed PET in the early 1970s. He presented an analysis of the key scientific discoveries and developments that contributed to the invention of PET.
FUNCTIONAL IMAGING

continued

E. Mark Haacke, PhD, presented a review of magnetic resonance research projects, ranging from cardiovascular to brain functional imaging. Haacke, a professor of radiology and chief of the MR physics laboratory, also discussed the future of MR research at the Imaging Center.

In his overview of the University's nuclear science program, Edward S. Macias, PhD, recognized Professor Arthur Holly Compton, a former Washington University chancellor and department chairman, for his instrumental role in developing diagnostic radiology and nuclear medicine. Macias is Washington University's provost.

Marcus E. Raichle, professor of radiology and neurology and a pioneer in the study of regional cerebral blood flow and metabolism, spoke on the rapidly emerging use of PET and MR in studies of the functional organization of the human brain in health and disease.
Maxwell Cowan, MD, PhD, invited speaker for the Twenty-third Annual Wendell G. Scott Memorial Lecture, is a familiar name at Washington University. A pioneer in developmental neurobiology, Cowan served as professor and chairman of the University’s Department of Anatomy and Neurobiology for 12 years. He also was director of the Division of Biology and Bio-medical Sciences from 1975 through 1980 and served as University provost and executive vice chancellor from 1986 to 1987. Cowan is now the vice president and chief scientific officer of the Howard Hughes Medical Institute in Chevy Chase, Maryland.

Cowan’s experience as a scientist and as an administrator at major research centers, such as Johns Hopkins University, The Salk Institute for Biological Studies, and Weingart Laboratory for Developmental Neurobiology, provided a solid foundation for his discussion of the implications of health care reform on the primary missions of medical schools: teaching and research. His topic was especially appropriate for the Scott Lecture, which was established in honor of Wendell G. Scott, MD, a dedicated teacher and an innovative researcher. Scott was perhaps best known for developing the radiograph from technology used in the World War II-era Fairchild A-5 Aerial Camera.

Maxwell Cowan: “The central issue of health care reform is to maintain the quality of health care in the United States while dealing with the economics. ... But attention must be paid to the main-streams of health care, namely the medical schools.”
FROM RESEARCH

"A CATALYST FOR EXCITING SCIENCE"

Following the Scott Lecture in the Institute's Scarpellino Auditorium, guests travelled down the block to the Imaging Center for a brief dedication and a tour of the building that Dr. Ronald Evens predicts will be "a catalyst for exciting science."

Ronald Evens: “The next decade will be an exciting time in MIR history.”

William Peck: “Fewer and fewer institutions will be able to support great science.”

William Danforth: “Mallinckrodt Institute has always been at the forefront of scientific enterprises.”

The Imaging Center Dedication Committee: (left to right) Michael Welch, PhD; Carolyn Anderson, PhD; Barry Siegel, MD; Marcus Raichle, MD; and Virginia Trent.

David J. Mahoney, chairman and CEO of the Dana Foundation, spoke to symposium lecturers and Imaging Center faculty at a dinner on November 10. Mahoney is a leading advocate for neurosciences research.
Two of MIR's world-renowned PET researchers: (left) Michael J. Welch, PhD, and Marcus E. Raichle, MD.

In the neurological PET lab, Randy Buckner, a graduate student, (right) spoke about the application of PET to the study of the human brain. MIR researchers have produced groundbreaking discoveries relating to psychiatric disorders and functional mapping of the brain's sensory and language information processing areas.

(Second from left) Lennis Lich, technical supervisor, explained the technology of a PET scanner. This head scanner supports research in the neurological PET lab.

Researchers will have access to a large clinical base of patients as study resources. Mallinckrodt Institute, the radiology department of Washington University's School of Medicine, coordinates radiological services for all hospitals within the Medical Center (Barnes, Jewish, and Children's) and for Barnes West in St. Louis County. The institute has strong long-term collaborations with system manufacturers and pharmaceutical companies, such as Siemens Medical Systems, Eastman Kodak, Mallinckrodt Medical, Varian Associates, Winthrop Pharmaceuticals, Science Research Laboratory Inc., and E.I. Dupont de Nemours. Additional resources that are conducive to clinical and basic research are available.

- 2 biomedical cyclotrons
- 8 computed tomography scanners with spiral CT capability
- 16 ultrasound machines
- 6 radiation therapy linear accelerators
- 11 digital vascular imaging systems
- Cell-culture laboratories.
Research Instructor Carmen Dence explained that the Tandem Cascade Accelerator (housed in an adjoining room) provides a less complex alternative to the conventional cyclotron-produced radiopharmaceuticals used in PET studies.

Robert Whitman (left) and Nilesh Jain from the electronic radiology lab gave visitors a glimpse into Project Spectrum. This community-wide medical information system will provide more than 5,000 BJC Health System-affiliated doctors with easy access to integrated data from 15 BJC hospitals.
AS WE APPROACH THE 100TH ANNIVERSARY OF WILHELM CONRAD ROENTGEN'S DISCOVERY OF THE X RAY, WE ARE REMINDED OF THE MAJOR ACHIEVEMENTS IN SCIENCE AND MEDICINE THAT EVOLVED THROUGH THE USE OF IONIZING RADIATION TO DETECT AND TREAT DISEASE. ESTABLISHED IN 1930 THROUGH THE GENEROSITY OF EDWARD MALLINCKRODT, SR., WASHINGTON UNIVERSITY'S MALLINCKRODT INSTITUTE OF RADIOLOGY IS ONE OF THE MOST SCIENTIFICALLY SOPHISTICATED RADIOLOGICAL CENTERS WORLDWIDE. INTERNATIONALLY RECOGNIZED FOR ITS GROUNDBREAKING RESEARCH — FROM THE DEVELOPMENT OF THE FIRST DIAGNOSTIC TEST FOR GALLBLADDER DISEASE TO CURRENT WORK ON THREE-DIMENSIONAL TREATMENT PLANNING FOR CANCER — THE INSTITUTE CONTINUES TO PIONEER NEW RADIOLOGICAL TECHNIQUES FOR BETTER PATIENT CARE.

(Left to right) Weili Lin, PhD; Debiao Li, PhD; Tom Miller, Siemens AG, Medical Engineering; and E. Mark Haacke, PhD, chief of the magnetic resonance imaging lab, are shown with one of the four Siemens MR scanners being installed in the Imaging Center.

During a stop in an MR scanner control room, Imaging Center tourers learned from Shantanu Kaushikkar, a research assistant and programmer in the MR physics lab, that the two first-floor MR scanners will be used for clinical and basic research. The scanners in the Imaging Center's lower level are designated for MR spectroscopy research.

Carolyn Anderson, PhD, gave Doctors Joanna Fowler, Marcus Raichle, Maxwell Cowan, and Ronald Evens a pre-dedication tour of the new Imaging Center.
With no fuss and little fanfare, exciting changes have been taking place on the second floor of The Jewish Hospital of St. Louis (JH). Last January, in a new partnership agreement with the BJC Health System, Mallinckrodt Institute of Radiology (MIR) assumed responsibility for the hospital’s diagnostic radiology services.

By Candace O’Connor

Partners In Rad
Radiologist Lawrence Kotner (foreground) and Herbert Sunshine, a Jewish Hospital attending physician, discuss a patient’s chest rays.
Since then, clinical service has continued without interruption amid a host of implementations that will enhance the quality and effectiveness of radiological care. Today, JH's expanded Department of Radiology offers patients state-of-the-art equipment and facilities and a staff of talented specialists. And there are more plans for the future, including a variety of research projects and new efficiencies in clinical care.

Both institutions are pleased with the arrangement. “We are thrilled with the newly established relationship between Jewish Hospital and Mallinckrodt Institute,” says Wayne M. Lerner, DPH, hospital president. “We look forward to bringing more of the advancements that the Institute is so well known for to the patients and physicians of our hospital.”

“This partnership is a demonstration of what can be accomplished when there are important goals — both clinical and academic — to be reached,” adds Ronald G. Evens, MD, director of Mallinckrodt Institute and chairman of Washington University School of Medicine’s Department of Radiology. “It has gone extremely well.”

The partnership’s success can be measured by a recent survey conducted by Professional Research Consultants of Omaha, Nebraska. Nearly 500 referring physicians were asked to rate their satisfaction level with the radiology departments at JH and at Barnes Hospital, where Mallinckrodt Institute also provides service. While the national norm is 78 percent for community hospitals and 73 percent for teaching hospitals, survey results indicated that 94 percent of the physicians polled were “very satisfied” with the Barnes and Jewish hospitals’ radiology departments.
“It takes important, well-recognized goals and outstanding resources, such as modern equipment and excellent facilities, to achieve this kind of success,” says Evens. “Above all, success requires dedication and commitment from professionals like we have at Jewish, Barnes, and Children’s hospitals.”

The roots of this radiology arrangement lie in the 1993 affiliation of Barnes and Jewish hospitals to form Barnes/Jewish, Inc. and in the hospitals' renegotiation of their Washington University School of Medicine contract. Previously, the two hospitals had maintained separate clinical departments, including radiology, but with the contract renegotiation, Barnes and JH were to have substantially similar relationships with the School of Medicine. The Barnes/Jewish affiliation — along with the subsequent formation of the BJC Health System that reaches throughout Missouri and Illinois and includes the network of Christian hospitals — triggered a consolidation of personnel, facilities, and services across the institutions.

“When Mallinckrodt Institute was asked to provide services at Jewish Hospital and to effect a consolidation of services between the two organizations, we agreed to accept that challenge,” says R. Gilbert Jost, MD, chief of MIR's Division of Diagnostic Radiology and radiologist-in-chief at Barnes Hospital. “Here was an opportunity to recreate the best aspects of both departments and to carry the Institute’s reputation into a new environment.”

The radiology staff is supported by a consolidated Jewish Hospital and Mallinckrodt Institute Diagnostic Radiology Residency Program. The program is the largest of its kind in the country and offers residents comprehensive training in the basic foundations of radiology while providing ample flexibility for meeting the needs and goals of each resident. All residents are given the opportunity to perform and to interpret a wide variety of procedures. A close association is maintained with other departments in the medical center, thus expanding benefits to patients and staff as well as broadening the residents' education.
A crucial step in establishing the merged department was the hiring of a radiologist-in-chief. In August of 1993, after a six-month national search, Evans and Lerner, cochairs of the search committee, announced the appointment of Scott A. Mirowitz, MD, then the director of Jewish Hospital's magnetic resonance imaging (MRI). With Mirowitz, JH's radiology department has a dedicated physician and scientist and a growth-oriented administrator. Under his leadership, the MRI section had reported an 80 percent growth rate over a period of three and one-half years while continuing to provide quality service to patients and their physicians.

“This past year has been a very exciting time,” says Mirowitz, who has supervised the radiology transition. “And it has been extremely satisfying to see positive changes come about.”

After a successful recruitment effort, there are now ten radiologists on the Jewish Hospital staff, drawn from within the Medical Center and from around the country. Three are experts in abdominal radiology, two in chest radiology, and one each in MRI, mammography, musculoskeletal radiology, nuclear medicine, and vascular and interventional radiology. To carry out the more than 100,000 radiology and nuclear medicine examinations performed at Jewish Hospital each year, radiology staff members, residents, and fellows have a wealth of new equipment and facilities. New reading and consultation areas opened in February 1994, along with a vascular and interventional suite and patient observation rooms. A helical computed tomography (CT) scanner was installed in April of this year, and a major upgrade of the MRI scanner took place in July. Currently, a second interventional suite is being renovated, as is a fluoroscopic room for gastrointestinal exams. The department also plans to upgrade a second CT scanner next year.

Thanks to a major construction project, completed in March of 1994, the staff is headquartered in a renovated office wing. A radiology library was opened in August, as well as space for clinical and administrative conferences. Two office support staff were hired.
Staff members all have integrated responsibilities for clinical care, teaching, and research. On the clinical side, the department is working together to initiate a number of improvements in patient care: increased number of available radiologists, deployment of radiologists across their various areas of expertise, extended hours for departmental coverage, and decreased waiting time for patients.

Plans for expanding the departmental research program go hand-in-hand with the Institute's reputation as a leading research facility. With a strong focus on magnetic resonance imaging, the department has finalized a research agreement with General Electric Medical Systems, a major manufacturer and vendor of imaging equipment. The agreement paves the way for exploring the use of MRI in different applications throughout the body, such as fast-imaging techniques that freeze motion, thus optimizing image quality and creating a minimum of artifacts. Other projects involve the investigation of computer-aided analysis of mammograms and skeletal imaging, the effectiveness of radiopharmaceuticals in abdominal imaging, and the appropriate use of various radiological techniques.

Altogether, the partnership between Mallinckrodt Institute and Jewish Hospital makes good sense for both institutions. "The partnership provides Jewish Hospital with Mallinckrodt Institute's many years of established excellence in radiology," says Mirowitz. "And the partnership affords the Institute an opportunity to further its contributions in a new hospital with its own important clinical and research activities."

In the vascular and interventional suite — Edward Angtuaco, MD, a fellow in neuroradiology; Greta Haynes-Wilkinson, RN; and (foreground) Barb Kopecky, RT.

This partnership is likely to foreshadow future developments, both at the Medical Center and beyond. As reorganization continues throughout the BJC Health System, services that now exist both at JH and at Barnes may be consolidated in one institution or the other. "For example, mammography is currently on both sides of the street [at Barnes and at JH]," says Jost. "It might make more sense for the Medical Center to have a single mammography area."

Further, Jost says, these kinds of consolidations are sure to occur more frequently nationwide, as hospitals search for ways to achieve greater efficiencies and to cut costs. "The affiliation of the Washington University Medical Center hospitals and the formation of BJC are forerunners, we think, of what will happen in the rest of the country," he adds.

Whatever shape these consolidations take, Mallinckrodt Institute will cooperate in making the transition as smooth as possible. "Our goal is to make it seamless. Whichever Medical Center facility may be involved, the best resources that the Institute can contribute will be there," says Evens. "And I think we're already moving toward that goal."
THE DIRECTOR’S OFFICE REPORT

NEW STAFF

Laura Bass, PhD, research associate in radiology, Division of Radiation Sciences.
Paritosh Dhawale, PhD, research associate in radiology, Magnetic Resonance Imaging Laboratory.
Chuanfan Guo, MS, research associate in radiology, Radiation Oncology Center.
Eyal Mishani, PhD, research associate in radiology, Division of Radiation Sciences.
Gregory G. Reiker, MS, research assistant in radiology, Electronic Radiology Laboratory.
Helmut Stark, research assistant in radiology, Magnetic Resonance Imaging Laboratory.

PROMOTIONS

Mary V. Graham, MD, was promoted to assistant professor of radiology, Radiation Oncology Center.
Kevin W. McEnery, MD, was promoted to assistant professor of radiology, Division of Diagnostic Radiology.
Janice W. Semenko, MD, was promoted to assistant professor of radiology, Division of Diagnostic Radiology.

JOINT APPOINTMENT

Michael G. Kahn, MD, associate professor of radiology, Division of Diagnostic Radiology.

OFF STAFF

Scott M. Baker, MD, instructor in radiology and chief resident, Division of Diagnostic Radiology, 1992-1993, completed four years of training in diagnostic radiology and a one-year fellowship in abdominal radiology. He has entered private practice with Cabarrus Radiologists, P.A. in Concord, North Carolina.
Clifford D. Barker, MD, instructor in radiology, completed a one-year fellowship in magnetic resonance imaging and has accepted a position in the Department of Radiology at Horton Memorial Hospital, Middletown, New York.
Benjamin J. Bartnicke, MD, instructor in radiology, completed four years of training in radiology and a one-year fellowship in abdominal radiology. He has entered private practice with Radiology Associates, P.A. in Little Rock, Arkansas.
Marc A. Borge, MD, instructor in radiology, completed a one-year fellowship in vascular and interventional radiology and has accepted a position in the Department of Radiology at Loyola University, Maywood, Illinois.

George Chacko, MD, research associate in radiology, Division of Nuclear Medicine.
John J. Crowley, MD, instructor in radiology, completed a one-year fellowship in pediatric radiology and has accepted a position in the Department of Radiology at Children’s Hospital of Michigan, Detroit.
Patrick D. Datoc, MD, instructor in radiology, completed a one-year fellowship in magnetic resonance imaging and has entered private practice with Northside Radiology Associates in Atlanta, Georgia.
Lane A. Deyoe, MD, instructor in radiology, completed a one-year fellowship in abdominal radiology and a one-year fellowship in vascular and interventional radiology. He has accepted a position with Bethesda Memorial Hospital in Boynton Beach, Florida.
Howard P. Forman, MD, assistant in radiology, completed a one-year residency in neuroradiology and has accepted a position with the National Institutes of Health in Bethesda, Maryland.
Bradley A. Kramer, MD, assistant in radiology, completed a one-year residency in radiation oncology and has accepted a position in the Department of Radiation Oncology at New England Medical Center, Boston, Massachusetts.
M. Saleem Mahmood, MD, assistant in radiology, completed a three-year residency in radiation oncology and has accepted a position with the Sylvester Comprehensive Cancer Center at Jackson Memorial Hospital, Miami, Florida.

Weihua He, MS, research assistant in radiology, Radiation Oncology Center.
Chi-lai Ho, MD, assistant in radiology, completed two years of training in nuclear medicine and has accepted a position in the Division of Nuclear Medicine at Queen Mary Hospital, Hong Kong.
Gopal R. Desai, MD, assistant in radiology, completed a three-year residency in radiation oncology.
Stephen J. Kennedy, MD, assistant in radiology, completed one year of training in nuclear medicine and has entered private practice with Radiology Group Practice in Tampa, Florida.
Myles B. Koby, MD, instructor in radiology, completed a one-year fellowship in neuroradiology and has accepted a position with the National Institutes of Health in Bethesda, Maryland.
L. Santiago Medina, MD, assistant in radiology, completed a four-year residency in diagnostic radiology and has accepted a position with Children's Hospital in Boston, Massachusetts.

Timothy R. O'Leary, MD, instructor in radiology, completed a three-year residency and a one-year fellowship in radiation oncology. He has accepted a position with the Radiation Therapy Oncology Center in New Port Richey, Florida.

James V. Piephoff, MD, instructor in radiology and chief resident, Radiation Oncology Center, 1993-1994, completed a three-year residency and a one-year fellowship in radiation oncology.

Gregory R. Saboeiro, MD, instructor in radiology, completed a one-year fellowship in vascular and interventional radiology and has entered private practice in St. Louis, Missouri.

Maria E. Schmidt, MD, instructor in radiology, completed three years of training in diagnostic radiology and a one-year fellowship in breast imaging. She has accepted a position in the Department of Radiology at St. Louis University Hospital, St. Louis, Missouri.

Joseph A. Schoenberger, MD, instructor in radiology, completed a one-year fellowship in vascular and interventional radiology.

Kevin L. Shady, MD, assistant in radiology, completed four years of training in diagnostic radiology and a one-year fellowship in magnetic resonance imaging. He has accepted a position with Alton Memorial Hospital in Alton, Illinois.

Spencer M. Smith, MD, assistant in radiology, completed four years of training in diagnostic radiology and has received a radiology fellowship at Johns Hopkins University Hospital in Baltimore, Maryland.

Anthony J. Wilson, MB, ChB, associate professor of radiology and director of emergency radiology, Division of Diagnostic Radiology, has accepted a position in the Department of Radiology at Harborview Hospital, University of Washington Medical Center, Seattle.

Robert C. Wood, MD, instructor in radiology, completed a one-year fellowship in neuroradiology and has accepted a position with All Saints Episcopal Hospital in Fort Worth, Texas.

Donald T. T. Yapp, BS, research associate, Division of Radiation Sciences.

FIRST-YEAR POSTGRADUATES

Kevin L. Berger, MD, received his undergraduate and medical degrees from the University of Michigan.

John B. Carico, MD, received his undergraduate degree from Vanderbilt University and medical degree from Washington University School of Medicine.

Mark K. Fromke, MD, received his undergraduate degree from Wheaton College and medical degree from St. Louis University School of Medicine.

R. Paul Guillerman, MD, received his undergraduate degree from Transylvania University and medical degree from Washington University School of Medicine.

Stephanie K. Hiskes, MD, received her undergraduate degree from Calvin College and medical degree from the University of Florida.

Scott L. Kaltman, MD, received his undergraduate degree from the University of Maryland at College Park and medical degree from the University of South Florida. He is a member of Alpha Omega Alpha.

Alan T. McDaniel, MD, received his undergraduate degree from Texas A & M University and medical degree from Harvard Medical School.

John M. Neil, MD, received his undergraduate degree from the University of Kansas and medical degree from Washington University School of Medicine.

Sandy A. Ruhs, MD, received her undergraduate degree and medical degree from the University of Iowa. She is a member of Alpha Omega Alpha.

Peter A. Salazar, MD, received his undergraduate degree from Dartmouth College and medical degree from Temple Medical School. He is a member of Alpha Omega Alpha.

Lloyd E. Stambaugh, MD, received his undergraduate degree from the University of Missouri-Columbia and medical degree from Duke University.

Myeong Sook Yoon, MD, received her undergraduate degree from the University of Missouri and medical degree from Washington University School of Medicine.

David C. Youmans, MD, received his undergraduate degree from Stanford University and medical degree from the University of California, San Diego.

FIRST-YEAR DIAGNOSTIC RADIOLOGY RESIDENTS

Jonathan M. Gurney, MD, received his undergraduate degree from the University of Michigan and medical degree from the University of Pennsylvania. He is a member of Alpha Omega Alpha.

David H. Kim, MD, received his undergraduate and medical degrees from the University of Michigan. He is a member of Alpha Omega Alpha.

John R. Leahy, MD, received his undergraduate degree from the University of Virginia and medical degree from Johns Hopkins University.

Gavin P. Slethaug, MD, received his undergraduate degree from McGill University and medical degree from the University of Toronto. He is a member of Alpha Omega Alpha.
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FIRST-YEAR NUCLEAR MEDICINE RESIDENTS
Virginia E. Klas, MD, received her medical degree from the University of California. She is a member of Alpha Omega Alpha.

John M. Lahorra, MD, received his medical degree from Ohio State University.

Hamid R. Latifi, MD, received his bachelor's and master's degrees from the University of California at Los Angeles and his medical degree from Washington University. He completed four years of radiology training at Mallinckrodt Institute of Radiology.

Scott C. St. Amour, MD, received his medical degree from Rush Medical College, Chicago. He completed four years of training in diagnostic radiology at Mallinckrodt Institute of Radiology.

First-Year Fellows
Kim B. Baker, MD, instructor in radiology, is a fellow in neuroradiology. He received his undergraduate degree from the University of Calgary and medical degree from the University of Alberta.

Gregory R. Cizek, MD, instructor in radiology, is a fellow in neuroradiology. He received his undergraduate degree from Northwestern University and medical degree from Washington University School of Medicine.

Constance S. Courtios, MD, instructor in radiology, is a fellow in vascular and interventional radiology. She completed a four-year residency in diagnostic radiology at Mallinckrodt Institute of Radiology and is a member of Alpha Omega Alpha.

Colin P. Derdeyn, MD, instructor in radiology and chief resident, Division of Diagnostic Radiology, 1993-1994, is a fellow in neuroradiology. He completed a four-year residency at Mallinckrodt Institute of Radiology.

Barry M. Chandler, MD, received his law degree from Tulane School of Law and his medical degree from Louisiana State University.

David Gius, MD, PhD, received his undergraduate degree from the University of Chicago and medical degree from Loyola University of Chicago.

First-Year Oncology Residents
Joseph Bargellini, MD, received his medical degree from New Jersey Medical School.

George J. Geohas, MD, received his medical degree from Northwestern University.

Richard S. Wagman, MD, received his medical degree from Temple University School of Medicine.

Thomas A. Farrell, MD, instructor in radiology, is a fellow in vascular and interventional radiology. He received his medical degree from University College, Dublin, Ireland.

Thomas H. R. Farmer, MD, instructor in radiology, is a fellow in magnetic resonance imaging. He completed four years of training in diagnostic radiology at Mallinckrodt Institute of Radiology.

Donald F. Frei, MD, instructor in radiology, is a fellow in neuroradiology. He received his undergraduate degree from the University of Illinois and medical degree from the University of Cincinnati.

Stephen F. Hatem, MD, instructor in radiology, is a fellow in musculoskeletal radiology. He received his undergraduate degree from Johns Hopkins University and medical degree from the University of Maryland.

Joseph Krysl, MD, instructor in radiology, is a fellow in vascular and interventional radiology. He received his undergraduate degree from St. Michael’s College, Toronto, and his medical degree from the University of Toronto.

Shawn P. Quillin, MD, received his law degree from the University of Missouri-Kansas City.

Elizabeth Platt Vining, MD, received her medical degree from the University of Missouri-Kansas City.

Avinash M. Sud, MD, instructor in radiology, is a fellow in neuroradiology. He received his undergraduate and medical degrees from the University of Tennessee.

James V. Rawson, MD, instructor in radiology, is a fellow in magnetic resonance imaging. He received his undergraduate and medical degrees from Tufts University.

Robert W. Ryerson, MD, instructor in radiology, is a fellow in pediatric radiology. He received his undergraduate degree from Washington University and medical degree from the University of Missouri-Kansas City.

Keith M. Sterling, MD, instructor in radiology, is a fellow in vascular and interventional radiology. He received his undergraduate degree from Carnegie-Mellon University and medical degree from New York Medical College.

Barry M. Chandler, MD, instructor in radiology, is a fellow in musculoskeletal radiology. He received his medical degree from the University of California, Los Angeles School of Medicine.
APPOINTMENTS/ELECTIONS

Louis A. Gilula, MD, professor of radiology and chief of musculoskeletal radiology, was appointed chairman of the Convention Planning Committee for the International Skeletal Society.

Lawrence M. Kotner, MD, associate professor of radiology, Division of Diagnostic Radiology, was appointed as the Institute's radiology coursemaster for the senior medical student elective.

Bruce L. McClennan, MD, professor of radiology and chief of abdominal radiology, was appointed chairman of the American Roentgen Ray Society's (ARRS) Instructional Courses Committee. As a committee chairman, McClennan serves on the ARRS Executive Council. He also is a member of the ARRS Annual Meeting Committee.

Scott A. Mirowitz, MD, associate professor of radiology and radiologist-in-chief at Jewish Hospital, was appointed to a one-year term on the editorial board of Investigative Radiology.

Joseph L. Roti Roti, PhD, professor of radiology, associate director of the Radiation Oncology Center, and chief of cancer biology, was appointed to a four-year membership of the National Institutes of Health Reviewers Reserve. He also was appointed a Department of Radiology safety coordinator representative.

FELLOWSHIPS/GRANTS

Richard K. Valicenti, MD, resident, Radiation Oncology Center, received a 1994-1995 American Cancer Society (ACS) Clinical Oncology Fellowship for advanced cancer studies. The ACS encourages the best and brightest young physicians to dedicate their careers to clinical oncology by providing funding for individuals affiliated with programs designed for the development of clinical expertise and independent clinical and laboratory research.

HONORS/AWARDS

Steven Don, MD, assistant professor of radiology, pediatric radiology, received a $5,000 award from the Society for Pediatric Radiology for his research on "Comparison of Computed Radiography with Film-Screen Radiography in Detecting Pulmonary Edema in a Rabbit Model Simulating Hyaline Membrane Disease." Don's research goals are to determine the relative accuracy of computed radiography (CR) and film-screen radiography (FSR) in detecting pulmonary edema in infants and to explore the potential for reducing radiation exposure in infants by replacing FSR with CR.


As chairman of the American College of Radiology's Intersociety Commission, Bruce L. McClennan, MD, professor of radiology and chief of MIR's abdominal radiology, organized the 1994 Radiology Summit Meeting. Ninety representatives debated ways "To Navigate the Demands of Change" facing the discipline of radiology and the practice of medicine.

David J. Scherer, MS, instructor in radiology, Division of Diagnostic Radiology, received American Board of Radiology (ABR) certification in diagnostic radiological physics and in medical nuclear physics. Scherer now joins a select group of medical physicists at Washington University who are ABR certified.

Michael W. Vannier, MD, professor of radiology and chief of the image processing laboratory, was named editor-in-chief of the IEEE Transactions on Medical Imaging Journal, a publication of The Institute of Electrical and Electronics Engineers. Vannier was appointed the 1994-1995 chairman of the National Institutes of Health (NIH) Biomedical Library Review Committee. Twenty-one authorities in the areas of health sciences, education, medical informatics, and biotechnology comprise the committee, which makes recommendations regarding NIH-sponsored projects, such as FIRST awards, research career development awards, training grants, and biomedical scientific publications.
VISITING PROFESSORS & INVITED LECTURERS

Carolyn J. Anderson, PhD, assistant professor of radiology, Division of Radiation Sciences, presented “Nuclear Medicine Imaging of Somatostatin Receptors” (coauthored with W. Barry Edwards, MS; Tammy S. Pajeau, MS, and Michael J. Welch, PhD) and, with Welch as co-chair, organized the “Radiochemistry in Medicine, New Chemical Approaches” Symposium at the American Chemical Society Meeting, Washington, D.C., August 21 - 25.

James A. Brink, MD, assistant professor of radiology, abdominal radiology, as visiting professor, spoke on “Spiral CT” at the The London Clinic, September 21, and at The Royal Marsden Clinic, London, England, September 24.

Jeffrey J. Brown, MD, associate professor of radiology and chief of magnetic resonance imaging, presented “Innovations in MRL,” “MR Imaging of the Liver,” “MR Imaging of the Pelvis,” and “MR Imaging of the Thorax” at the 6th Annual Radiology and Imaging Course, Central Military Hospital, Mexico City, Mexico, October 6-8. He lectured on “MRI of the Upper Abdomen,” “Future Trends in MRI,” and “MRI of the Pelvis” at the 45th Annual Meeting of the Royal Australasian College of Radiologists, Christchurch, New Zealand, October 29 and 30.

Thomas E. Conturo, MD, PhD, assistant professor of radiology, neuroradiology, presented “Theory of Phase Enhancement Contrast Agent Mechanisms: Microscopic Effects” (coauthored with Erbil Akbudak, MS) at the Society of Magnetic Resonance Meeting, San Francisco, California, August 6 - 12.

DeWitte T. Cross, MD, assistant professor of radiology, neuroradiology, presented “Update on Interventional Neuroradiology” at a meeting of the Greater St. Louis Society of Radiologists, St. Louis, Missouri, November 22.

Colin P. Derdeyn, MD, instructor in radiology and a fellow in neuroradiology, presented scientific exhibits “Practical Aspects of Intraoperative Angiography” (coauthored with Christopher J. Moran, MD; DeWitte T. Cross, MD; and John O. Eichling, PhD) and “Intraoperative Angiography: A Review of 115 Cases” (coauthored with Adam P. Brown, MD, Department of Neurological Surgery; Moran; Cross; Robert L. Grubb, MD, Department of Neurological Surgery; and Ralph G. Dacey, MD, Department of Neurological Surgery) at the Congress of Neurological Surgeons, Chicago, Illinois, October 2 - 6.

Louis A. Gilula, MD, professor of radiology and chief of musculoskeletal radiology, presented refresher courses on “Tailored Approach to Wrist CT,” and “CT of the Foot and Ankle” at the International Skeletal Society Meeting, Berlin, August 15 - 20. He spoke on “Current Imaging Techniques for the Painful Wrist” at the American Society for Surgery of the Hand, Cincinnati, Ohio, October 29.

Harvey S. Glazer, MD, associate professor of radiology, chest radiology, as visiting professor, lectured on “CT of Pulmonary Collapse” and “Chest Differential Diagnosis” at the University of Michigan, Ann Arbor, October 20 and 21.


Grigsby lectured on “Radiotherapeutic Management of Cervical Cancer” at Grand Rounds, Department of Obstetrics and Gynecology, Cook County Hospital, Chicago, Illinois, November 14.

Jay P. Heiken, MD, professor of radiology and cochief of computed body tomography, as invited lecturer, presented “MRI of Renal Neoplasms,” “Spiral CT: Practical Considerations,” “CT and MRI of the Aorta,” and “Understanding the Peritoneal Spaces” at the Fourth Summer Practicum of the Society of Computed Body Tomography and Magnetic Resonance, Napa, California, August 21 - 25. He spoke on “Spiral CT: Overview and Practical Considerations,” “Contrast Enhancement Techniques for CT of the Liver,” “Characterization of Hepatic Masses with CT and MRI,” and “CT and MR Imaging of the Aorta” at Radiology/94 Thoracic and Abdominal Imaging, sponsored by the University of Minnesota, Minneapolis, October 5 - 9. As visiting professor, Heiken lectured on “Spiral CT: Overview and Practical Considerations,” “CT and MRI of the Aorta,” “CT and MRL Evaluation of Renal Neoplasms” at the Mayo Clinic, Rochester, Minnesota, October 19 and 20.

Eric E. Klein, MS, instructor in radiology, Radiation Oncology Center, spoke on “Multileaf Collimators and Asymmetric Jaws” at a meeting of the American Association of Physicists in Medicine - Missouri River Valley Chapter, St. Louis, Missouri, October 29.

Scott A. Mirowitz, MD, associate professor of radiology and radiologist-in-chief at Jewish Hospital, served as moderator for a scientific session on "MR Imaging of the Abdomen" at the Annual Meeting of the Society of Magnetic Resonance, San Francisco, California, August 6 - 12.

Stephen M. Moerlein, PhD, associate professor of radiology and biochemistry, as invited lecturer, presented "Applications of Radiochemistry in Medical Imaging" at the Research Center Juelich, Juelich, Germany, November 5.


Joel S. Perlmutter, MD, associate professor of neurology and radiology, Division of Radiation Sciences, spoke on "Current Treatment of Dystonia and Clinical Manifestations and Differential Diagnosis of Parkinson's Disease" at the Diagnosis & Current Treatments: Parkinson's Disease, Dystonia, and Drug-induced Movement Disorders Seminar, sponsored by The American Parkinson Disease Association and the Office of Continuing Medical Education at Washington University School of Medicine, St. Louis, Missouri, September 10.

Douglas D. Robertson, MD, PhD, assistant professor of radiology and surgery, musculoskeletal radiology, presented "Does the Length of a Femoral THA Prosthesis Effect Prosthesis-bone Contact, Bone Strains, or Prosthesis Torsional Stability?" at SIROT 94 (Société Internationale de Recherche Orthopédique et de Traumatologie), Boston, Massachusetts, October 23.

Joseph L. Roti Roti, PhD, professor of radiology, associate director of the Radiation Oncology Center, and chief of cancer biology, spoke on "The Role of DNA Structure in Radiation Cells" at the Danish Cancer Society, Department of Clinical Oncology, Aarhus, Denmark, June 20. He presented the scientific exhibit "Nuclear Matrix Protein Content and DNA Loop Rewinding in Cell Lines of Varying Radiosensitivity" at the FASEB Summer Research Conference, Molecular Genetic Basis of Cell and Tissue Structure and Function, Copper Mountain, Colorado, August 15 - 17. Roti Roti lectured on "Possible Role(s) of Nuclear Matrix and DNA Loop Organization in Fixation or Repair of DNA" at the International Workshop on Radiation Damage in DNA: Structure/Function Relationships at Early Times, Gleeneden, Oregon, October 1 - 6.

Henry D. Royal, MD, professor of radiology and associate director of the Division of Nuclear Medicine, presented "Informed Consent and Radiation: How Not to Frighten Your Patients to Death" at the Eighth Northeast Regional Scientific Meeting of the New England Chapter/Greater New York Chapter of the Society of Nuclear Medicine, Boston, Massachusetts, October 7 - 9.

VISITING PROFESSORS & INVITED LECTURERS

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Marilyn J. Siegel, MD, professor of radiology, pediatric radiology; presented “Ultrasoundography of the Acute Pediatric Abdomen,” “Pediatric Gynecologic Sonography” at the 24th Annual Scientific Meeting of the Australasian Society for Ultrasound in Medicine, Perth, Australia, August 24 - 27. She spoke on “Craniomaxillofacial Radiology” at the Acuson Color Seminar, St. Louis, Missouri, September 24. Siegel presented “RDOG Update - Pediatric Solid Tumors” at the Midwest Pediatric Radiology Meeting, Memphis, Tennessee, September 30.

Celette Sugg Skinner, PhD, research instructor in radiology, Division of Diagnostic Radiology, as part of a three-member team sponsored by the National Cancer Institute, spoke on “Tailored Inventions for Increasing Mammography Compliance” to investigators of The United Kingdom Trial of Screening for Breast Cancer Among Younger Women at Britain’s Institute of Cancer Research, Royal Marsden Hospital, Sutton Surrey, England, August 25. She presented “Do Women Understand Their Breast Cancer Risks?” (coauthored with Matthew Kreuter, PhD, Saint Louis University School of Public Health and Victor J. Strecher, PhD, University of North Carolina School of Public Health) and “Do Barriers to Mammography Vary by Stage?” (coauthored with Victoria L. Champion, PhD, Indiana University) at the annual meeting of the American Public Health Association, Washington, D.C., October 30 - November 2.

Deborah T. Wadsworth, MD, instructor in radiology, pediatric radiology, spoke on “Ultrasound Evaluation of Abdominal Pain in Children” at the Ninth Annual John V. King Family Medicine Symposium, St. John’s Mercy Medical Center, St. Louis, Missouri, September 7.

Jeffrey F. Williamson, PhD, associate professor of radiology and chief of brachytherapy physics service, received the 1994 AAPM Farrington Daniels Award for the best paper on radiation dosimetry published in Medical Physics in 1993. The paper, “Comparison of Calculated and Measured Heterogeneity Correction Factor for $^{125}$I, $^{137}$Cs, and $^{192}$Ir Brachytherapy Sources near Localized Heterogeneities,” was coauthored by Harold Perera, PhD, Hahneman University; Zuofeng Li, DSc, radiation oncology physics resident; and Wendell R. Lutz, PhD, University of Arizona.

Anthony J. Wilson, MB, ChB, associate professor of radiology and director of emergency radiology, presented “Musculoskeletal Digital Imaging” at the International Skeletal Society Annual Refresher Course, Berlin, Germany, August 17.

SYMPOSIA

THE AMERICAN ASSOCIATION OF PHYSICISTS IN MEDICINE

The following Mallinckrodt Institute staff members (highlighted in boldface type) participated in the 36th Annual Meeting and Technical Exhibition of the American Association of Physicists in Medicine (AAPM), Anaheim, California, July 24 - 28.

Jeffrey F. Williamson, PhD, associate professor of radiology and chief of brachytherapy physics service, received the 1994 AAPM Farrington Daniels Award for the best paper on radiation dosimetry published in Medical Physics in 1993. The paper, “Comparison of Calculated and Measured Heterogeneity Correction Factor for $^{125}$I, $^{137}$Cs, and $^{192}$Ir Brachytherapy Sources near Localized Heterogeneities,” was coauthored by Harold Perera, PhD, Hahneman University; Zuofeng Li, DSc, radiation oncology physics resident; and Wendell R. Lutz, PhD, University of Arizona.

PRESIDENT’S SYMPOSIUM: MEDICAL APPLICATIONS OF RADIOACTIVITY

Jeffrey F. Williamson, PhD, “Recent Developments in Quantitative Brachytherapy Dosimetry.”

SCIENTIFIC PROGRAMS

James A. Purdy, PhD, cochairman, “Therapy: Treatment Planning and Delivery,” moderator, “TQM/QI Program.”

Russell L. Gerber, MS; Y. Abel Cheng, MS; Harold Perera, PhD; James A. Purdy, PhD, “Clinical Implementation of Patient Dose Verification Using In-Vivo Diode Detectors.”


Assen S. Kirov, PhD; Ali S. Meigoomi, PhD; Yimin Zhu, PhD; Richard K. Valicenti, MD; Jeffrey F. Williamson, PhD, “Quantitative Verification of $^{192}$Ir Pulsed and High Dose-Rate Source Structure by Pin-hole Autoradiography.”

Eric E. Klein, MS; William B. Harms, BS; Daniel A. Low, PhD; Zuofeng Li, DSc; Virgil M. Wilcut, MS; James A. Purdy, PhD, “Clinical Implementation of Multi-leaf Collimation: Dosimetry, Networking, and Quality Assurance.”

MALLINCKRODT INSTITUTE OF RADIOLOGY
Eric E. Klein, MS; John P. Gibbons, PhD*; Zuofeng Li, DSc**; Suzanne Chungbin, MS***; Colin Orton, PhD****, "Benchmark Measure for Lung Corrections for Energies Ranging from Co-60 to 19 MV." *University of Minnesota, Minneapolis. **radiation oncology physics resident, Barnes Hospital, St. Louis, Missouri. ***Wayne State University, Detroit, Michigan. "radiation oncology physics resident, Barnes Hospital, St. Louis, Missouri. ****Wayne State University, Detroit, Michigan.

Eric E. Klein, MS; Daniel A. Low, PhD; Derek K. Maag, electronic technician; James A. Purdy, PhD, "A Quality Assurance Program for Ancillary High Technology Devices on a Dual-Energy Accelerator."

Daniel A. Low, PhD; Xiao-Rong Zhu, PhD; William B. Harms, BS; James A. Purdy, PhD, "Convolution Modification to a Ratio TAR Algorithm for 3D Photon Beam Treatment Planning: Kernel Measurements."

Daniel A. Low, PhD; William L. Straube, MS; Eduardo G. Moros, PhD; Virgil M. Wilcut, MS*; Eric E. Klein, MS; Robert J. Myerson, MD, "Radiation Dosimetry of a Modified Ultrasound Applicator for Simultaneous Superficial Hyperthermia and External Beam Photon Therapy."

William L. Straube, MS; Ali S. Meigooni, PhD; Eduardo G. Moros, PhD; Jeffrey F. Williamson, PhD; Robert J. Myerson, MD, "HDR Induced Temperature Artifacts and Other Thermometry Considerations for Simultaneous Thermoradiotherapy."

Richard K. Valicenti, MD; Assen S. Kirov, PhD; Ali S. Meigooni, PhD; Vivek Mishra, PhD; Jeffrey F. Williamson, PhD, "Validation of Monte Carlo Dose Calculations About a High-Intensity 192Ir Source for Pulsed Dose-Rate Brachytherapy Using Thermoluminescent Dosimetry."

Rupak K. Das, PhD; Vivek Mishra, PhD; Ali S. Meigooni, PhD; Jeffrey F. Williamson, PhD, "A Secondary Air- Kerma Strength Standard for Yb-169 Interstitial Brachytherapy Sources."

Robert E. Drzymala, PhD; Keith M. Rich, MD*; Joseph Z. Wang*, "Interactive, Image-Guided Neurosurgery. "Department of Neurological Surgery, Washington University School of Medicine, St. Louis, Missouri."

Ali S. Meigooni, PhD; Rupak K. Das, PhD; Jeffrey F. Williamson, PhD, "Variation of TLD Sensitivity with TLD Size in Brachytherapy Dosimetry." Xiang-Rong Zhu, PhD; William A. Low, PhD; William B. Harms, BS; James A. Purdy, PhD, "Convention Modification to a Ratio-TAR Algorithm for 3D Photon Beam Treatment Planning: Algorithm and Implementation."

AMERICAN SOCIETY FOR THERAPEUTIC RADIOLOGY AND ONCOLOGY

The following Mallinckrodt Institute staff members (highlighted in boldface type) participated in the 36th Annual Scientific Meeting of the American Society for Therapeutic Radiology and Oncology (ASTRO), San Francisco, California, October 2 - 6.

Perry W. Grigsby, MD, MBA, chairman, Long Range Planning Committee.

James A. Purdy, PhD, member, Scientific Program Committee; member, Long Range Planning Committee.

Todd H. Wasserman, MD, member, Long Range Planning Committee.

POSTER AND EXHIBIT SESSIONS

Perry W. Grigsby, MD, MBA; Heidi Roberts, BA*; Carlos A. Perez, MD, "The Incidence of Femoral Fracture Following Groin Irradiation for Gynecologic Malignancies." *medical student, University of Texas Medical School, Houston, Texas.
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SYMPOSIA

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Daniel Keleti, MD; Marie E. Taylor, MD; Carlos A. Perez, MD; Robert J. Myerson, MD; Karen Halverson, MD; Delia M. Garcia, MD; Carol Rush, clinical research assistant; Mary Ann Lockett, MBA, "Prognosis Following Local and Regional Local Recurrence After Breast Conservation Therapy for Stage I and II Breast Cancer." "Department of Radiation Oncology, St. Luke's Hospital, St. Louis, Missouri. 466 Department of Radiation Oncology, Missouri Baptist Hospital, St. Louis, Missouri.

Martha Michaeletz-Lorenz, CMD; Eric E. Klein, MS; Marie E. Taylor, MD, "Use of a Lucite Beam Spoiler for High Energy Breast Irradiation." "Chief dosimetrist, Barnes Hospital, St. Louis, Missouri.

Mary E. Taylor, MD; Carlos A. Perez, MD; Daniel Myerson, MD; Karen Halverson, MD; Delia M. Garcia, MD; Carol Rush, clinical research assistant, "Breast Failure Analysis by Surgical Procedure and Tumor Pathologic Factors in Patients with Stage I and II Breast Cancer Treated with Conservation Therapy." "Department of Radiation Oncology, St. Luke's Hospital, St. Louis, Missouri. 466 Department of Radiation Oncology, Missouri Baptist Hospital, St. Louis, Missouri.

PANEL DISCUSSIONS

James A. Purdy, PhD, moderator, "PACS and Informatics for Radiation Oncology."

James A. Purdy, PhD, "ICRU Report on Prescribing, Recording, and Reporting Photon Beam Therapy."

REFRESHER COURSES

Bahman Emami, MD, "3-D Conformal Radiation Therapy: Clinical Aspects."

Perry W. Grigsby, MD, MBA, "Carcinoma of the Endometrium - Prognostic Factors and Management."

Changes and Alterations in Pelvic Patient Positioning Using Electronic Portal Imaging."

Mary V. Graham, MD; Robert E. Drzymala, PhD; Nilesh L. Jain, MD; James A. Purdy, PhD, "Confirmation of Dose-Volume Histograms and Normal Tissue Complication Probability Calculations to Predict Pulmonary Complications after Radiotherapy for Lung Cancer." "Division of Medical Informatics, Department of Internal Medicine and Department of Computer Science, Washington University School of Medicine, St. Louis, Missouri.

William B. Harms, BS; Daniel A. Low, PhD; James A. Purdy, PhD; James A. Purdy, PhD; A Quantitative Software Analysis Tool for Verifying 3-D Dose Calculation Programs."

Jeff M. Michalski, MD; Mary V. Graham, MD; John W. Wong, PhD; Walter R. Bosch, DSc; Russell A. Gerber, MS; Y. Abel Cheng, MS; Alfred T. Tanger, MD; James A. Purdy, PhD; Carlos A. Perez, MD, "Prospective Clinical Evaluation of an Electronic Portal Imaging Device." "Department of Radiation Oncology, William Beaumont Hospital, Royal Oak, Michigan.

John W. Matthews, DSc; Frederick U. Rosenberger, PhD; Walter R. Bosch, DSc; William B. Harms, B.S. Robert E. Drzymala, PhD; James A. Purdy, PhD, "Real-Time 3-D Dose Calculation and Display: A Tool for Plan Optimization."

Mary V. Graham, MD; Robert E. Drzymala, PhD; Nilesh L. Jain, MS; James A. Purdy, PhD, "Confirmation of Dose-Volume Histograms and Normal Tissue Complication Probability Calculations to Predict Pulmonary Complications after Radiotherapy for Lung Cancer." "Division of Medical Informatics, Department of Internal Medicine and Department of Computer Science, Washington University School of Medicine, St. Louis, Missouri.

Carlos A. Perez, MD; Perry W. Grigsby, MD, MBA; Hernan Castro-Vita, MD; Mary Ann Lockett, MBA, "Impact of Prolongation of Irradiation and Tumor Size in Carcinoma of the Uterine Cervix."

Alfred Tanger, MD; Jeff M. Michalski, MD; Walter R. Bosch, DSc; Richard K. Valicenti, MD; Robert J. Myerson, MD, "An Analysis of Intratreatment and Intertreatment Variations in a Pelvic Patient Positioning Using Electronic Portal Imaging."

RADIATION AND BIOLOGICAL SCIENCES

The following Mallinckrodt Institute staff members (highlighted in boldface type) participated in the Tenth Annual Meeting of MIR-ROC Radiation and Biologic Sciences Symposium, St. Louis, November 18 - 20.

Joseph L. Roti Roti, PhD, chair, Organizing Committee; member, Program Committee.

Kathy Bles, James Patterson, members, Local Arrangements Committee.

SYMPOSIUM I: OXIDATIVE STRESS RESPONSE

Andrei Laszlo, PhD, chair-person.
Xiafang Zhang, MD; Douglas R. Spitz, PhD; Michael A. Mackey, PhD, "Alteration in Anti-Oxidants During Long Duration, Moderate Hyperthermia and Heat-Induced Radiosensitization."

Douglas R. Spitz, PhD; Julia E. Sim, medical research technician, "Cellular Mechanisms of Resistance to Nitric Oxide-Mediated Toxicity."

SYMPOSIUM II: HEAT SHOCK EFFECTS AND RESPONSES
Robert P. Vander Waal, PhD; K. George Thampy, PhD; William D. Wright, BS; Joseph L. Roti Roti, PhD, "Heat-Induced Modifications in the Association of Specific Proteins with the Nuclear Matrix."

Ming Xu, MS; William D. Wright, BS; Joseph L. Roti Roti, PhD, "A New Type of Thermotolerance (?)"

Andrej Laszlo, PhD; Teri Davidson, MA, "Thermotolerance and Macromolecular Synthesis in Human Fibroblasts."

Ming-shun Chen, PhD; Teri Davidson, MA; Andrej Laszlo, PhD, "Novel Factors Which May Participate in the Transcriptional Regulation of HSP Genes Identified by Gel Mobility Shift Assay."

WORKSHOP I: FREE RADICAL BIOLOGY, AN INTEGRATED OVERVIEW.
Douglas R. Spitz, PhD, chairperson.

Douglas R. Spitz, PhD, "Cellular and Molecular Mechanisms of Adaptation to Oxidative Stress in H2O2 and O2 Resistant Cell Lines."

WORKSHOP II: THERMODYNAMIC STABILITY
Michael A. Mackey, PhD, "Thermodynamic Stability and Kinetic Analysis of Reaction-Diffusion Systems: Application to Free Radical Reactions of Biological Interest."

SYMPOSIUM IV: STRUCTURE AND RESPONSES TO STRESS
Clayton R. Hunt, PhD, chairperson.

Prabhat C. Goswami, PhD; Daniel L. Silbergeld, MD; Azemat J. Parsian, BS; Clayton R. Hunt, PhD, "Expression of G1-Cyclins in Human Gliomas." "Department of Neurological Surgery, Washington University, St. Louis, Missouri.

Yvonne C. Taylor, PhD; Azemat J. Parsian, BS, "Phosphorylation of the Retinoblastoma Gene Product Earmarks the Radiation-Induced G1 Arrest Point."

Robert S. Malyapa, MD; William D. Wright, BS; Joseph L. Roti Roti, PhD, "DNA Loop Organization and Nuclear Matrix Proteins in Oncogene-Mediated Radioresistance in Rat Embryonal Cells."

Robert S. Malyapa, MD; William D. Wright, BS; Joseph L. Roti Roti, PhD, "DNA Loop Organization and Nuclear Matrix Proteins Influence Repair or Fixation of Radiation-Induced Damage."

Glenn H. Roberson, MD, was appointed professor and chairman of the Department of Radiology at Texas Tech University Health Sciences Center School of Medicine in Lubbock. At the time of his appointment, Roberson was the medical director for Computerized Medical Imaging in Sherman Oaks, California. In 1968, Roberson was an associate resident at Mallinckrodt Institute and later completed an NINDS Special Fellowship in Radiology (neuroradiology). He joined the MIR staff in January of 1971 as an instructor in radiology and later served as an assistant professor of radiology until 1972.

U.S. Senator Bill Bradley, a childhood friend of Mallinckrodt Institute Director Ronald Evans, presented the Washington University 1994 Commencement address, "America's Challenging World: New Economy, New Diversity, New Challenges." Bradley (left) and Evans (middle) are shown with Washington University Chancellor William Danforth and (background) Lee Liberman, former chairman of the Board of Washington University.
MIR Residents, Fellows, and Trainees for 1994-1995

(seated, left to right) Doctors John Lahorra; Virginia Klaus; Ronald Evens, director of the Institute; Avinash Sud; Gregory Cizek; (standing, left to right) Robert Ryserson; James Rawson; Kim Boker; Donald Froh; Thomas Farrell; Joseph Krysi; Stephen Hatem; David Tsai; Elizabeth Vining.

(seated, left to right) Doctors Richard Wagman; Jennie Yoon; Sandy Ruhs; Ronald Evens, director of the Institute; John Neil; David Youmans; John Carico; (second row, left to right) Lloyd Stambaugh; Peter Sulemar; Scott Kaltman; Mark Fromke; Stephanie Hiskes; Kevin Berger; Barry Chandler; (third row, left to right) Gavin Slethaug; Paul Guillerman; John Lehky; Jonathan Gurney; Alan McDaniel.
Twinkling lights, potted plants, and soothing harp music helped to transform the Imaging Center’s third-floor shell space into a cozy setting for a reception following the building dedication.

1 Virginia Trent, administrator for planning, marketing, and public relations, coordinated the dedication and reception.

2 (left to right) Doctors William Peck, Marilyn Siegel, and Barry Siegel.

3 (left to right) Rick Otolino from the architectural firm of Stone Marraccini & Patterson; Joe O’Malley, MIR facilities administrator; and Fred DeWeese, the Medical School’s director of design and construction.

4 Gary Shackelford, MD, pediatric radiology; Hanna Evans; Penelope Shackelford, MD, pediatrics; and David Melson, MIR’s electronic radiology laboratory.

5 Douglas Robertson, MD, PhD, (right) and Washington University students Katherine Raichle and Paul Scheet.

6 Jerry Murphy (right) and David Hirsch from Siemens Medical Systems, Inc.