2003

Department of Radiology-Annual Executive Summary Report-July 1, 2002 to June 30, 2003

Vijay M. Rao, M.D.

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The Mission of the Department of Radiology is to provide quality imaging and to continually improve our services.

Our goals are to:

- Provide quality service to patients and referring physicians
- Continue to grow successfully in an increasingly competitive market
- Operate in an efficient, productive, and cost effective manner
- Maintain excellence of our educational programs
- Continue to stay at the cutting edge of imaging research
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A change in leadership in any organization is fraught with difficulties and turnover, more so in the current challenging environment of academic radiology. At present, there are an estimated 620 open positions in academic radiology nationwide. Against this backdrop, I am pleased to say that the transition in leadership has been relatively smooth. I am grateful to the faculty for their support, understanding, hard work, and dedication, making this past year a successful one. The change in leadership could not have gone as smoothly as it has without the outstanding assistance provided by JoAnn Gardner during the past year and my sincere thanks go out to her. I must also thank Victor Sarro and his team of dedicated staff, all of whom continue to work tirelessly, cohesively, and efficiently in response to mounting challenges posed by the phasing in of several new projects. Finally, I must thank the cooperative and supportive administration of both the Hospital and Medical College.

Reflections on the key events of the past year and upcoming planned initiatives reveals a promising bright future for the department.

I am grateful to Andrea Maitino for the extensive and excellent assistance she provided in compiling this entire report.

This report will address the key events of the past year in the following areas:

1) Department Organization
2) Clinical Activities
3) Planned New Clinical Programs
4) Clinical Weaknesses
5) Clinical Informatics
6) Educational Programs
7) Research Accomplishments
8) Research Weaknesses
9) Opportunities for Extramural Funding
10) Affiliations and Interdepartmental Activities
11) Department Administration
12) Department Goals
13) Issues for the College, University and Hospital

Vijay M. Rao, M.D.
Professor and Chair
DEPARTMENT ORGANIZATION

During the past year, the divisional structure of the department was reorganized, maintaining a hybrid structure combining modality-oriented and organ system-oriented divisions. As a part of this reorganization, two new divisions were created: the Division of Musculoskeletal Radiology, directed by Dr. Mark Schweitzer, and the Division of Cardiothoracic Radiology, directed by Dr. Ana Salazar. Dr. Adam Flanders was appointed to serve as co-director of the Division of Neuroradiology with Dr. David Friedman. In addition to the standing committees (Education, Research, Performance Improvement and Residency Selection), a committee on Clinical Informatics was added with Dr. Christopher Merritt as the chair. These committees have functioned effectively. Changes in the leadership of the Educational Program included Dr. Levon Nazarian’s appointment as Chair of the Education Committee, Dr. Lisa Tartaglino’s selection as the Residency Program Director, and Dr. David Eschelman’s designation as Director of Medical Student Education. Senior leadership of the department was restructured with the appointment of two new Vice Chairs: Dr. Geoffrey Gardiner for Administration and Finance and Dr. Christopher Merritt for Informatics. Dr. Barry Goldberg continued to serve as Vice Chair for Research and Dr. Mark Schweitzer served as Vice Chair for Clinical Practice.

CLINICAL ACTIVITIES

The highlight of the clinical activities was the grand opening of Jefferson Center City Imaging (JCCI), our new outpatient-imaging center. JCCI is an entrepreneurial joint venture between Jefferson University Physicians Radiology Department, Thomas Jefferson University Hospital, and Outpatient Imaging Affiliates, LLC. This joint venture, the first of its kind, came to realization because of the visionary leadership of my predecessor David Levin, M.D., with support of the hospital and medical college, and will perhaps serve as a model for other joint ventures in the future. Located in Walnut Towers, it is a full modality imaging center incorporating MRI, CT, US, computed radiography, and DEXA scanning, and has helped to alleviate backlogs in patient imaging that had developed in the department. The new facility also introduced the first clinical PET scanner to the Jefferson campus. JCCI is an example of a world class outpatient imaging facility, and is committed to delivering an effective, efficient, and timely service to our referring physicians and patients in a warm, friendly environment. JCCI got ramped up fairly quickly and the budgeted targets have been consistently exceeded for the past six months.

Rothman Institute King of Prussia MRI was added this year to our many outside contracts, which now include Langhorne MRI, Bala MRI, Academy Imaging, the Rothman Institute MRI, the Open MRI in the COB, Doylestown MRI, and the Jefferson Hospital for the Neurosciences (JHN). These contracts represent an important part of our practice. They provide a large volume of interesting case material, which benefits our training programs, as well as generating significant additional revenue.
In CVIR, a fourth procedure room was added on the 5th floor of the Gibbon building. This room enabled the Radiology department to consolidate all procedures requiring conscious sedation into one area, which is appropriately equipped and staffed to ensure the best possible patient care. This has also permitted added flexibility for CVIR to handle emergency or unscheduled urgent cases. Additionally, utilization of procedures such as chemoembolization, immunoembolization, and uterine fibroid embolization continued to grow.

In the Musculoskeletal Division, there was continued expansion of the musculoskeletal interventional procedures such as kyphoplasty, vertebroplasty, biopsies, and spinal and paraspinal therapeutic injections, with access to the fourth interventional room in CVIR. In the Breast Imaging Center, the number of breast MR examinations has increased and will likely continue to grow.

In Body CT, a new 16 channel multi-detector CT scanner on the 3rd floor of Gibbon as well as a new 4 channel multi-detector CT at JCCI has allowed us to perform new applications including isotropic vascular angiography and cardiac calcium scoring. The MDCTs and newly installed VITREA workstations have expanded applications of CT angiography in Neuroradiology/Head and Neck Radiology and have allowed the group to utilize multivoxel spectroscopy.

In Ultrasound, expansion efforts continued, led by Levon Nazarian, MD, in developing and expanding both diagnostic and therapeutic musculoskeletal applications, which have received extensive recognition. An explosive growth in the program is anticipated. Under the leadership of Anna Lev-Toaff, MD there has been an increase in sonohysterography procedures in which Oksana Baltarowich MD is now an active participant.

The Nuclear Medicine division began using the Phillips Allegro, a full-ring dedicated PET scanner located in JCCI. In addition, a second bone densitometer at JCCI has facilitated the extremely long backlog in patients undergoing dual energy x-ray absorptiometry. The inception of FDG-PET imaging in both oncology and neurology began in January 2003, and the number of cases are steadily increasing.

Overall, we had a strong year in clinical practice. Trends in imaging utilization revealed a continual shift from conventional radiography to the more complex types of procedures, such as MRI, CT, and nuclear medicine. Our overall CT procedures increased by 6% this year. Although MRI volume on campus increased by 1.8%, our satellite MRI centers at Langhorne, Bala, and Doylestown are facing increasing competition and showed substantial drops.

**PLANNED NEW CLINICAL FACILITIES AND PROGRAMS**

There are some very important new developments in the works for the coming year. Principal among these will be the renovation of the 3rd floor of the Gibbon building to add a second 16 slice MDCT scanner and a 3 Tesla MR unit. Also a new 1.5T magnet will be
acquired as a replacement for the outdated unit currently on 10 Main. This equipment will reduce the waiting time for exams, as well as allow us to provide state-of-the-art examinations to the Jefferson community. The planned renovations on 3 Gibbon will allow us to provide an outstanding service to our patients in a friendly, comfortable environment.

At the Breast Imaging Center, expansion of breast MRI services is planned with the anticipated new MRI compatible vacuum assisted device to provide MRI-guided mammotome biopsies. With a new faculty member who has been trained in breast MRI during her fellowship arriving in mid-July, the number of image guided needle biopsies performed per day should increase, thereby decreasing the backlog of 2-4 weeks for a biopsy.

In CVIR, the interventional group is eager to introduce new techniques such as endovenous laser therapy for venous sclerosis. In Body MRI, the installation of the 3T magnet and replacement of the outdated 1.5T unit will increase our potential for offering cardiac MR services for the evaluation of ischemic heart disease. We will also be able to greatly expand our MRA capabilities, particularly for peripheral vascular disease, improving the quality of the studies and reducing the examination time.

In Ultrasound, plans are being developed to establish a women's imaging center concept for outpatients, which will provide an integrated program for women's imaging including gynecology, obstetrics, sonohysterography and mammography as well as bone density evaluations. Additionally, with the vast media attention TJU has received for both the diagnostic and therapeutic applications of musculoskeletal ultrasound, recognizing the expertise of Dr. Levon Nazarian, an increase in clinical referrals is expected.

In the Body CT Division, the introduction of MDCT will increase patient throughput with faster higher resolution isotropic scanning and enhance our ability to deliver same day outpatient services. The new scanners will also provide the ability to offer new services besides advanced angiography including coronary angiography and internal rendering of various visceral structures including CT colonoscopy. Dr. Laurence Needleman was appointed as the acting Director of Body CT to fill in during Dr. Wechsler's prolonged medical leave. He has done an outstanding job and I thank him for assuming this responsibility.

In Nuclear Medicine, the installation of a PET scanner in the outpatient imaging center will increase our capabilities in both oncologic and neurologic services with CMS' approval of the use of FDG-PET in well-differentiated thyroid cancer for patients who are radioiodine negative but thyroglobulin positive, as well as selected patients with Alzheimer's dementia and related disorders. Moreover, to facilitate the long waiting period for outpatient stress myocardial perfusion imaging, the division will work together with the Division of Cardiology in the development of stress myocardial perfusion imaging at the Jefferson Heart Institute.

In Neuroradiology/Head and Neck Radiology, the 3T MR unit will provide advanced imaging technology
including functional MRI and MR spectroscopy. The utilization of these techniques will be made possible with the arrival of an MRI physics team arriving in late August.

CLINICAL WEAKNESSES

We face several challenges in our clinical operation. Although there has been a substantial move forward with the acquisition of new a MDCT and the imaging equipment in the outpatient imaging center, the replacement of the only in-house MRI and installation of the new 3T and second MDCT were delayed until the '04 fiscal year. As a result, we have been limited in our clinical and research capabilities during the past year. Additionally, much of the equipment, including many of the gamma cameras in the department, are in need of replacement.

Given the advances in CT and MRI technology, the on-line image processing needs to be improved in order to demonstrate images in an optimal manner, ensuring the radiologist does not become the limiting factor in delivery of timely service. This optimally includes state-of-the-art workstations at every reading point. Also, the systems management needs to be improved to allow the integration of RIS, HIS, PACS, voice recognition, image exchange, and report distribution with the absence of requirements for multiple points of data entry and with accurate access in order to compare examination and reports. Our PACS has become a limiting factor in the progressive implementation of CR.

The lack of space necessary for seeing patients referred directly to CVIR and other divisions and for following patients treated has affected our clinical services. Additionally, there is no holding area for inpatients in Nuclear Medicine. Instead, patients are in wheelchairs and stretchers in the hallway around the reception desk, making the area chaotic.

The nationwide manpower shortage in radiology is a major challenge for us and has left us unable to fill vacancies in thoracic radiology and CVIR. There is also a shortage of radiologic technologists. With the current budgetary restraints, it is becoming impossible for us to compete with the higher paying institutions and privately owned outpatient centers in the area.

A less than optimal turnaround of radiology reports continues to plague us. At times when we are short of transcriptionists, our turnaround times have unfortunately been greatly extended, but this will be remedied with implementation of voice recognition in 2004.

CLINICAL INFORMATICS

Information technology is a fundamental component of radiology services and essential for a successful healthcare delivery system. Today, a critically important role of radiology is the management of images and image-related data. Under the outstanding leadership of Dr. Christopher Merritt, a number of initiatives are in progress, which will allow us to reach our goal of becoming a completely digital department in the near future.

A new Radiology Information System (RIS) is in the process of being implemented under the direction of Charles Lockard and is expected to be completed by February 2004.
Complete conversion to computed radiography (CR) which allows plain films to be read digitally has been significantly delayed due to limitations of image transfer with the Canon PACS and the inadequate image processing on the Canon workstations. While the newly installed workstations have temporarily solved problems for CT and MR, the options for a long term solution are being explored.

Our current Canon PACS, installed in 1997, is outdated and unable to meet the needs of the department and institution. Continued delays from Canon have prevented the migration to Version 7-1 of Canon software originally scheduled for May 2003. We have also learned Canon is abandoning its PACS enterprise.

Hospital management has been made aware of the critical deficiencies of the Canon PACS and its impact. The Clinical Informatics Committee, under the direction of Dr. Merritt, is now in the process of developing a plan for a PACS replacement.

Plans for implementation of voice recognition (VR) are moving forward. This is expected to improve report turnaround time significantly, thereby improving service to our referring physicians. Vendor selection was completed with due diligence by Dr. Merritt and Victor Sarro. Dictaphone Powerscribe 4.5 has been selected, and implementation is scheduled to begin in November 2003. Targets for conversion from transcription to voice recognition have been set, with the initial goal of at least 70% of reports converted to voice recognition by July 2004. Studies have shown that implementation of voice recognition can add up to 20% of extra time for the radiologists, but will save substantial amount of money for the hospital.

We are committed to working with the hospital in providing images via the web to the clinicians. Unfortunately, Canon PACS and CR issues have delayed expanded implementation of the Radiology Image Access System (Stentor iSite). Hospital IT has budgeted for approximately 20 workstation to be placed in clinical areas to allow improved access to the radiology image system. Full implementation is targeted for Fall 2003. This will allow easy access to digital images for the clinicians throughout the hospital and will allow us to provide improved service to the physicians who refer patients to our department.

HIPAA regulations, effective April 14, 2003, addressing issues of patient confidentiality and privacy were implemented nationwide. With its RIS, PACS and web applications, radiology is greatly affected by security issues. The Clinical Informatics Committee is addressing the needs, restrictions, and audit procedures associated with HIPAA regulations and data security required for technologists, physicians, and clinical and administrative personnel.

EDUCATIONAL PROGRAMS

One of the major strengths of our department lies in the well-designed and dynamic teaching programs at all levels of graduate education. Our residency is recognized nationally as one of the best training programs. Our fellowship programs are also very desirable. We continue to successfully compete with the top programs in the country for the best residency applicants as well as fellowship
applicants. However, in the current environment, it is becoming increasingly challenging to maintain high quality teaching programs. Faculty are finding themselves in a time bind and the morale is volatile. Increasing clinical responsibilities are encroaching upon the time that was previously available for teaching and research activities. At the present time, there is a workforce crisis in radiology due to a severe shortage of radiologists nationally. Despite all this, our faculty remained committed to the education of medical students, residents, and fellows and deserve to be commended. Our continued success in the future depends largely on our ability to retain high caliber faculty.

RESIDENCY TRAINING PROGRAM

The primary goal of our residency program is to produce radiologists who are well trained in all aspects of diagnostic imaging so that they will feel comfortable in either an academic setting or a private practice environment. It gives me great pleasure to report that each of our six senior residents passed the written and oral portions of the American Board of Radiology examination. Our residency program ranked tenth out of 196 programs nationally based on the performance of residents in the oral examination. All of our resident graduates have been accepted into top notch fellowship programs. This is a testimony to the excellence of our training programs. Four of the six graduating residents chose to stay with us for fellowships; one in combined body/neuro MRI, one in breast imaging, one in Body MRI, and one in musculoskeletal radiology. Two residents are pursuing fellowship training at Beth Israel Deaconess Medical Center in Boston; one in Body MRI and the other in cross-sectional imaging. Administering residency programs is becoming increasingly arduous and time consuming because of newly added ACGME regulations. My sincere thanks go out to our Residency Program Director, Lisa Tartaglino, M.D., for an outstanding job.

Resident Selection: This year we received 570 applications for six positions and interviewed 80 applicants. The results of the residency match program (NRMP) once again proved that our residency program is recognized nationally as one of the best. We filled all of our positions with choice candidates within the top 15. Thanks go to Levon Nazarian, M.D., Chairman of the Residency Selection Committee, for this outstanding performance.

Resident Research: Research by residents is actively encouraged. In fact, residents are required to complete at least one project by the end of the third year. It is gratifying to note that our residents presented several scientific papers at national radiology meetings this year. The Radiological Society of North America again sponsored the resident/fellow Roentgen Research Award program and invited academic departments to nominate a candidate who had demonstrated accomplishments in radiological investigation. Hongyu Shi, M.D. was the recipient of the 2002 Roentgen Research Award for our department.

Clinical Training: Our clinical practice continues to grow, and this provides a wealth of interesting case material for resident/fellow education. The addition of state-of-the-art equipment including two MDCT
scanners and a PET scanner provide exposure to cutting edge technology for our residents and fellows. Rotations at the Academy Imaging Center continued to be received favorably by the third and fourth year residents. They have gained exposure to the world of private practice while participating in conventional radiography, mammography, and ultrasound at this center. The computed tomography and MRI studies are read at Jefferson itself via teleradiology. The total time spent at the A.I. duPont Institute during residency training increased to 2 months per resident to enhance the educational experience in pediatric radiology.

**Excellence in Teaching Award:**
The teaching efforts of our faculty are recognized and rewarded each year. The A. Edward O'Hara Award is given each year by the residents to a faculty teacher of the year, and this year Stephen Karasick, M.D. was the recipient.

**TRAINING PROGRAMS FOR FELLOWS**

Our fellowship programs continued to enjoy another year of excellence. There is an increasing number of extremely well qualified applicants in most of the areas offered by our department including: cardiovascular/interventional radiology, body MRI, combined body and neuroradiology/ENT, neuro/head and neck MRI, US/CT/MRI, and musculoskeletal radiology. All of the above programs received very positive year-end critiques from the graduating fellows.

This year a national match program analogous to the residency NRMP was instituted nationally for all fellowship programs. All of our fellowship programs were filled with choice candidates.

The breast imaging fellowship under the direction of Cathy Piccoli, M.D., has been redesigned to incorporate ultrasound and MRI of the pelvis and breast, since there is an increasing interest in women's imaging. Our cross-sectional imaging fellowship, under the direction of Barry B. Goldberg, M.D., continues to be in great demand. The vascular and interventional fellowship, under the direction of Joseph Bonn, M.D., is an accredited program and remains very popular. The combined body and neuro MRI fellowship, under the direction of Donald Mitchell, M.D., is a unique fellowship program, which allows the fellows to gain experience in MR imaging from head to toe. The musculoskeletal fellowship program, under the direction of David Karasick, M.D. and Mark Schweitzer, M.D., was recently expanded and is in much demand. The new neuroradiology/ENT radiology fellowship, under the direction of David Friedman, M.D., is an accredited program and remains popular.

Our visiting fellowships remain very popular in the various subspecialty areas; these programs allow practicing radiologists to learn new techniques and sharpen their traditional skills. Because of our international reputation, several physicians from overseas have chosen to pursue their research theses in our department in the divisions of MRI, Neuroradiology/ENT, Ultrasound, etc.
TEACHING PROGRAMS FOR MEDICAL STUDENTS

I am pleased that radiology continues to be included in the core curriculum for sophomore students. I wish to thank the core group of enthusiastic faculty members who willingly contribute their time to this important teaching exercise for Jefferson medical students. This group consists of Cathy Piccoli, M.D., Ana Salazar, M.D., and Terri Tuckman, M.D. Dr. Tuckman served as the coordinator of this course for this year and has done a fine job.

The junior and senior students can choose to attend one or more of the four separate electives offered by our department which include general radiology, neuroradiology/ENT radiology, CVIR, and ultrasound/CT/MRI. The radiology electives remain quite popular and were completed by 165 members (82.5%) of the senior class, either here or at an outside institution. Our radiology elective courses are also popular with medical students from other institutions, with 11 students in attendance this year.

The neuroradiology elective was completed by 16 senior medical students. Electives in cross-sectional imaging and CVIR were completed by 13 and 5 students respectively. All of these courses received rave reviews from the students. I wish to thank all the course coordinators for a fine job - David Karasick, M.D. for general radiology, David Friedman, M.D. for neuroradiology, Rick Feld, M.D. for cross-sectional imaging and David Eschelman, M.D. for CVIR.

RESEARCH DESIGN SEMINAR SERIES FOR FACULTY

Ethan Halpern, M.D. conducted a seminar series on research design and methods. Dr. Halpern, who has a master's degree in clinical epidemiology from the University of Pennsylvania, offered to provide this series to encourage junior faculty to become involved in research. The course was open to members of the department who had developed a research hypothesis for a grant submission. The series of seven half-day lectures and discussion sessions introduced the group to basic epidemiological principles, sample size calculation, statistical methods, and grant writing skills, as well as helping to develop each of the hypotheses into grant submissions. Three individuals participated in the seminars and plan to submit their grants for funding.

CONTINUING MEDICAL EDUCATION PROGRAMS

In spite of all the added pressures of increasing clinical responsibilities, our faculty devote an enormous amount of energy and time to educational activities.

Division of General Radiology: A variety of courses were offered by the division of general radiology, which were all well received. The Jefferson Spine Imaging Symposium, directed by John Carrino, M.D., was held in October 2002 with 156 attendees; the Jefferson Upper Extremity Advanced Imaging Symposium was directed by J. Antoni Parellada, M.D. in February 2003 with 170 attendees; as well as the Jefferson Lower Extremity Advanced Imaging Symposium was directed by William Morrison, M.D. in June 2003 with 114 attendees.
**16th Annual Philip J. Hodes Lecture:** In honor of Philip J. Hodes, M.D., the Sixteenth Annual Philip J. Hodes lecture was very successful. The guest speaker was Harvey L. Neiman, M.D., Executive Director of the American College of Radiology. He gave an outstanding presentation titled “Molecular Medicine: A New Imaging Paradigm”.

**Radiology Grand Rounds:** Grand Rounds in Radiology were held bi-weekly and included 13 topics of interest covering all radiology subspecialties.

**Radiology Research Conferences:** The bi-weekly Radiology Research Conferences were continued this year under the direction of Barry B. Goldberg, M.D. This conference allows the faculty, residents, and fellows in the department the opportunity to present the results of their research activities.

**Jefferson Ultrasound Research and Education Institute (JUREI):** The Jefferson Ultrasound Research and Education Institute, under the leadership of Barry B. Goldberg, M.D., continued its educational programs with more than 40 courses offered in all aspects of ultrasound. The annual Leading Edge meeting, which was held for the first time in Philadelphia at the Wyndham Hotel, was a success with attendance at greater than 1,200 people. The program was supported by a wide variety of exhibitors and there were lecturers from this country and abroad providing symposia on Ob/Gyn, vascular ultrasound imaging, ultrasound physics, musculoskeletal ultrasound imaging, sonomammography, and a symposium on ultrasound contrast agents.

Educational activities of the division will continue in the coming year to support the training of medical students, residents, and fellows under the leadership of various members of the staff including Ethan Haipern, M.D. and Oksana Baltarowich, M.D. A series of conferences in all aspects of ultrasound have been arranged for fellows and residents similar to the past year. Our programs for physicians and paramedical personnel, as well as scientists from around the world continue. Efforts are being made to reduce cost and to expand income. To this end, several grants have been or are being submitted. One grant, “Teaching the Teachers” program for Latin America, has been submitted to the RSNA Research and Education Fund. Another grant is under development and will be submitted within the next several months to fund our worldwide ultrasound education projects. It should be noted that Siemens has donated ultrasound machines to this program, which will be used in the grant process as in-kind contributions, and should improve our capability of obtaining funding. In addition, efforts are ongoing to develop a similar training program with Siemens Ultrasound, as well as with Bracco, an ultrasound contrast company which should get approval for the sale of a radiologic ultrasound contrast agent by the first quarter of 2004. All of these efforts should help to support JUREI. At the same time, working closely with Larry Waldroup, we are looking at eliminating those courses which are uneconomical in order to decrease overall expenses. There are also active discussions to significantly reduce printing costs by providing educational material on CD-ROM.
RESEARCH ACCOMPLISHMENTS

Although the demands of clinical activities continue to increase, with less academic time provided to faculty members, the department's research productivity remained strong. There were 26 NIH or other federal grants active during the year, in addition to 7 foundation or medical society grants, and another 23 industrial grants. As a group, these grants brought in total current year funding of $1,595,561, including $1,164,897 in direct support and $430,664 in indirect. These totals are down somewhat compared with last year. We had 234 publications in the medical literature (including journal articles, books and book chapters, and published abstracts) compared with 266 the previous year. Dr. Carin Gonsalves was awarded the annual Judy Dubbs Memorial Research Award, given to the junior faculty member deemed to be the most productive in research. Additionally, our trainees continued to be productive in quality research, evidenced by Dr. Traiforos being awarded the RSNA Resident Research Trainee Prize, a very competitive nationwide award.

2002-2003 Fiscal Year Funding

Total Funding (all budget years)
Our division of **diagnostic ultrasound**, under the leadership of Dr. Barry Goldberg, continued its exceptional research productivity. Several faculty members participated in valuable projects, which encompass all aspects of ultrasound imaging. Dr. Halpern explored a variety of prostate evaluations using ultrasound contrast, including his continued efforts on his DOD-funded study of prostate cancer detection using contrast-enhanced ultrasound in patients. Dr. Goldberg has been working on a variety of funded projects with Drexel University relative to the development of targeted contrast agents. He has also been investigating the use of ultrasound contrast agents to detect sentinel nodes. Dr. Lev-Toaff was awarded a SRU grant on sonohysterography in postmenopausal women. Dr. Merritt continued animal and human studies for his NIH project on ultrasound elastography. The ultrasound division’s basic scientists also remained active in research. Dr. Forsberg has been conducting research in several areas including basic physical properties of ultrasound, tissue characterization, and drug delivery. During the past year he was the principal investigator of six federally funded projects, and submitted an additional four grants, which are currently pending, to federal agencies for funding. Dr. Liu completed his work on an NIH subcontract, evaluating a high frequency ultrasonic microscope and submitted two grants to federal agencies for funding.

Our **musculoskeletal group** continued to publish extensively. Dr. Schweitzer published 31 papers in literature, 4 book chapters, and 23 abstracts. Most of his work dealt with MRI of traumatic injuries and inflammatory diseases, as well as MR arthrography. Dr. Morrison had 11 papers, 3 book chapters, and 19 abstracts published. Dr. Morrison received the contract to be the independent core lab to review images for an industry-sponsored lumbar spine fusion device. The newest faculty member in the division, Dr. Zoga, became the principal investigator of an NCI funded cooperative group study using radiofrequency ablation on bone metastases.

**In breast imaging**, Dr. Piccoli completed a project funded by the NIH and Breast Health Institute on clinical evaluation of digital mammography. She continues her efforts on the NCI funded cooperative group study of digital versus plain film mammography, one of the largest multi-institutional diagnostic accuracy studies conducted. Dr. Piccoli has also been selected to evaluate a new system for post processing of breast MRI studies designed by Confirma, Inc.

In **nuclear medicine**, Dr. Thakur continues his work supported by an NIH/STTR grant on the imaging of deep vein thrombosis and pulmonary embolism. He is also a co-principal investigator on a DOE-supported project on tumor imaging using gene expression (not listed among our grants because the PI is from another department). Also, his research laboratory is experimenting with 99mTc PNA, a radiolabeled peptide with an affinity for receptors on pancreatic and colorectal cancers. Dr. Intenzo published an article on the scintigraphic appearances as well as clinical and laboratory findings in all causes of thyrotoxicosis, from the very common to the very rare. This
The manuscript was selected as the "feature article" by the editor for that particular issue. At the RSNA, the division presented a total of 10 abstracts covering a wide range of organ systems, namely pulmonary, endocrine, oncology, cardiology, as well as health policy and practice.

In **body CT**, several manuscripts were published by our trainees under the mentorship of faculty members. In **thoracic imaging**, Dr. Shah continued her research productivity, presenting her research on CT findings in long-term follow-up of scleroderma. In **CVIR**, Dr. Sullivan continued his collaborative work with Dr. Takami Sato on GM-CSF embolization of liver metastases from uveal carcinoma. Dr. Gonsalves received the Scientific Program Award High Honors for her poster on infections in sickle cell patients after implantation of venous access devices.

In **body MRI**, Dr. Mitchell was awarded an NIH grant to study the use of MR to evaluate patients with Hepatitis C. He also continued his collaborative research with the Division of Gastroenterology and Hepatology, submitting a manuscript on hemorrhagic cysts and preparing a manuscript on predicting cirrhosis in the setting of fatty infiltration. In **neuroradiology/head and neck radiology**, Dr. Friedman submitted two manuscripts (now in press) and gave multiple presentations of his findings from his survey on practice patterns in neuroradiology. Dr. Flanders continued his work on functional MRI with Dr. Tracy of the Department of Neurology.

Our **health services research** continued to increase, resulting in our department remaining a national leader in this area. In the past year, Andrea Maitino, Dr. David Levin, Dr. Laurence Parker and I published two manuscripts and 14 abstracts on health services research, as well as an additional 3 articles that are in press. Projects included trends in utilization of non-invasive diagnostic imaging in the Medicare population, reviews of survey data from academic and non-academic institutions, world-wide trends in utilization of MR, and projections for the utilization and expense of neuroimaging and musculoskeletal imaging in the Medicare population in future years.

**RESEARCH WEAKNESSES**

Cutting edge research depends on the proper research infrastructure (funds and personnel) to support preliminary research. The department cannot compete with academic institutions that have strong undergraduate science facilities to allow interdisciplinary and translational research, as well as reserve funds to support research infrastructure.

With most federal agencies making translational research a priority, there must be an incentive for departments at TJU to collaborate on projects. Unfortunately, all indirect costs accrued on projects are awarded to the department which the principal investigator is located. For collaborative research to be fruitful, the indirect costs need to be split among the departments when the research is truly a joint endeavor.

Although the department has been productive in clinical research, the research efforts are limited by both the equipment that we are using and the lack of research support staff to assist with the projects. This should
be remedied in part during the upcoming year with the acquisition of new CT and MR equipment and the arrival of the MR physics team.

Another research limitation is the lack of an animal imaging facility at TJU. In the summer of 1999, the task force on strategic planning for research at Jefferson recognized that an appropriate imaging facility is crucial to the advancement of research efforts across the campus. Regrettably, this facility has yet to materialize. With the sophisticated imaging technology now available to image the molecular components of tissue and the metabolic pathways of normal and diseased systems, research endeavors for the entire Jefferson community are suffering. Although the department of radiology is taking the initiative to obtain extramural funds from the NIH to acquire some animal imaging equipment, the college must consider subsidizing our efforts by making monies available for the facilities and infrastructure.

**OPPORTUNITIES FOR EXTRAMURAL FUNDING**

The 21 grant proposals currently pending are listed in Table 2 of the appendix. There are 14 pending proposals for federal grants and/or subcontracts and 7 proposals to foundations, medical organizations, or industry. The proposals cover a broad spectrum of radiology research. There are also several pending projects outside the department in which our faculty are listed as co-investigators. These are not listed in Table 2 as the principal investigators are faculty members from other TJU departments.

The American College of Radiology Imaging Network (ACRIN), an NCI funded cooperative group, remains a good source of extramural funding for the department. The department has been involved in three projects since the cooperative group's inception (imaging of cervical cancer, digital versus screen-film mammography, and radiofrequency ablation of bone metastases). The department is about to start two new projects on breast imaging with Dr. Piccoli listed as the principal investigator of both. These projects involve using MRI of the contralateral breast in patients with newly diagnosed breast cancer and the use of ultrasound in breast cancer screening. There are additional projects, which are under development at ACRIN, which we hope to participate in.

The addition of the state-of-the-art multi-slice CTs and a 3T MRI scanner provides our department with the resources to perform cutting edge research. We have negotiated a research agreement with Philips Medical Systems to work with them on clinical research projects. Currently, our pending projects involve cardiac CT, prostate CT, and CT/MR evaluation of stroke. We hope that this close R&D collaboration with Philips will be beneficial to the department, allowing us to be at the forefront of advances in CT and MR imaging. Also, the MDCT provides us with the ability to participate in industry-sponsored pharmaceutical trials. Dr. Needleman is currently negotiating with a pharmaceutical company to perform two studies on CT angiography versus conventional digital subtraction angiography for evaluation of peripheral and abdominal vessels.
The acquisition of the 3T magnet in conjunction with the department's new MR physics team will provide fruitful endeavors in cardiac, musculoskeletal, and neurologic imaging. The equipment will also help to improve the quality of research other departments are performing by allowing them to use in vivo imaging to monitor physiologic and molecular processes and the effects of treatment.

AFFILIATIONS AND INTERDEPARTMENTAL ACTIVITIES

The use of imaging in almost all clinical and research evaluations involves our department with virtually every other clinical department in the medical school and other institutions in the area in a variety of different areas. Just a few examples are the following:

**Joint program in nuclear cardiac imaging:** The department forged an equitable partnership with the Division of Cardiology, and established an outpatient imaging facility for nuclear cardiac imaging at the Jefferson Heart Institute as a JUP Cardiology- Radiology joint venture. This will facilitate expedient service to patients and reduce extended backlogs.

Our physicians in CVIR and interventional ultrasound have close relationships with several oncologists who are working with us to investigate the use of hepatic chemoembolization, immunoembolization, and radiofrequency ablation in patients with primary and metastatic liver cancer. CVIR continues to work closely with the vascular surgeons, especially in the placement aortic stent-grafts, which is a combined procedure. Breast imaging has collaborations with researchers at Geisinger Medical Center, Fox Chase Cancer Center, and Drexel University to examine different aspects of breast disease and diagnosis. Musculoskeletal radiology works closely with Department of Orthopedic Surgery on shoulder, hip, foot and spine projects. Neuroradiologists continue to collaborate with researchers in the Departments of Neurology, Neurosurgery, and Orthopaedic Surgery. Body MR has worked extensively with the hepatology and transplant group in the Department of Medicine, and recently has begun to collaborate with the MRI group at Mount Sinai Hospital in New York to evaluate high-risk individuals for atherosclerotic plaques. In the division of ultrasound, Dr. Halpern continues his joint effort with the Department of Urology in the Jefferson Prostate Center, while Dr. Nazarian's progress with Dr. McShane from Family Medicine has been widely publicized. Dr. Lev-Toaff continues her efforts in perinatology in the area of high-risk pregnancy, and gastroenterology relative to endoscopic ultrasound. Additionally, we continue to increase efforts at cooperation with engineering departments at both Drexel University and the University of Delaware.

DEPARTMENT ADMINISTRATION

Mr. Victor Sarro serves both as administrator of the radiology department and business manager of the physician practice plan, which is an enormous undertaking for any one person. Hospital administration had seriously considered creating the new
position of director of clinical operations under Mr. Sarro, but abandoned the idea with continuing budget constraints. I would urge that this much needed position be reconsidered, as the departmental clinical activities continue to grow and new projects to improve clinical services are continually implemented.

Despite the countless responsibilities that Mr. Sarro has assumed, he has continued to provide outstanding administrative leadership during the past year. He and his administrative staff have worked together to tirelessly accomplish numerous goals over the past year. To begin with, Mr. Sarro, working closely with OIA, was instrumental in planning and supervising the opening of the outpatient imaging center (JCCI) in Walnut Towers. This center has proven to be a crucial addition to the department, the hospital, and the Jefferson community.

Mr. Sarro has also assisted Dr. Merritt extensively with projects under the aegis of Clinical Informatics. With Mr. Sarro’s assistance, significant progress has been made on the transition to voice recognition, implementation of computed radiography and planning for PACS. These projects involved an incredible amount of planning and organization by Mr. Sarro.

Additionally, Mr. Sarro and his team of administrative and technical personnel have been working closely with Ted Yuen and Scott Eldredge in planning the major renovations that will occur on 3 Gibbon and 10 Main. These much needed renovations will result in improved clinical space and operation on 3 Gibbon, thereby improving workflow and making the area more attractive and comfortable for patients. The first phase of the improvements was successfully completed in April 2003 with the installation of the MDCT on 3 Gibbon. The remainder of the project is expected to progress just as smoothly under Mr. Sarro’s guidance.

Also among the many initiatives Mr. Sarro has accomplished is the evaluation and selection of the new 3 Tesla and 1.5 Tesla MR units for 3 Gibbon and 10 Main respectively. He spent a considerable amount of time working closely with TJUH, Einstein and Methodist Hospital to facilitate the acquisition by the health system of the best equipment for the most reasonable price.

DEPARTMENT GOALS

To become a digital department - A digital radiology department will allow electronic order entry, computerized scheduling, interpretation of images on soft copy workstations, reporting by voice recognition, and electronic report and image distribution to referring physicians, and thereby facilitate efficient service to referring physicians and patients, while increasing the productivity of our staff. This is one of the major goals of the department and we anticipate completion within the next two years. This entails successful implementation of numerous projects. Some of these projects are already in progress. Many of the components of this undertaking will be controlled by the new radiology information system (RIS), whose implementation is expected to begin in August 2003 and be completed by early 2004. Timelines have also been established to implement a voice recognition system for generation of reports.
which is anticipated in Fall 2003. While Canon PACS and CR issues have unfortunately delayed expanded implementation of the Radiology Image Access System (Stentor iSite), Stentor software has been upgraded and user passwords are currently being converted to work with the new application. User training materials have been developed and made available through the radiology information web site. The hospital has budgeted for approximately 20 workstations to be placed in clinical areas to allow access to the radiology image access system throughout the hospital. Full implementation is targeted for Fall 2003.

Some of the projects to enable a completely digital radiology environment have been fraught with problems and are still in the planning stages. As mentioned earlier, the implementation of computed radiography began as planned, but has come to a halt, due to a number of issues related to the limitations of image transfer with the Canon PACS and the inadequate image processing on the Canon workstations. Although an interim solution has been established, additional planning will be needed for a permanent solution to this problem. Additionally, with Canon abandoning its PACS enterprise, PACS replacement seems inevitable. Hospital management has been made aware of critical deficiencies of Canon PACS and we have begun the process of evaluation and selection of a new PACS.

Retain and recruit faculty – The success of any department is intrinsically related to its ability to retain motivated and dedicated faculty and recruit enthusiastic young faculty. As mentioned earlier in this report, this is very challenging in the current academic radiology environment. National data show that there are presently approximately 620 open positions for radiologists in academic radiology departments. Jefferson cannot compete with the higher incomes offered in private practice, as well as at some other academic centers. The majority of physicians who choose academic careers do so because they are dedicated to advancing their field through research and/or educational activities. With the continued budgetary constraints that the institution faces, support staff for faculty has been downsized. Therefore, while faculty members are expected to increase their productivity, they must now assume various administrative tasks, giving them less time to pursue their research and educational interests. In the upcoming year, we need to continue to retain our currently faculty and recruit new faculty with academic potential. This will require providing competitive compensation, as well as adequate time and infrastructure for the faculty to pursue their academic endeavors.

Strengthen the clinical practice – With the additional of one multidetector CT and new equipment in the outpatient imaging center, as well as the projects underway to add another MDCT, a 3T MR unit, and a new 1.5T magnet, the department will be able to offer cutting edge clinical services on state-of-the-art equipment. We must promote the application of the new technology to ensure that the Jefferson community will take advantage of current advances in oncologic, cardiac, and neurological imaging. In addition, our new organizational structure with organ system-oriented divisions will provide
the opportunity to establish infrastructure that is essential for TJU to advance their research programs.

**Preserve excellence of training programs** – As a teaching institution, we must continue to provide high quality educational programs to medical students, residents, fellows, and visiting physicians. The ability to continue our success as a nationally recognized training program and to recruit the highest caliber residents and fellows lies in our ability to retain and recruit dedicated faculty and to provide that faculty the time for educational activities. The future of the field of radiology depends on the quality of training we provide to our residents and fellows and therefore, maintaining the educational program will remain a goal of the department.

**Enhance research programs** – Over the past year, we were able to recruit a high caliber MRI physicist who will begin in late August 2003. He will be bringing with him a team of computer programmers and post-doctoral fellows to support a much-needed MRI research program. The new MRI program will improve research within the department, providing us the ability to significantly improve the level of extramural funding in the department. Additionally, the MRI program will allow collaborative research between radiology and other departments in the university. Much of the Jefferson community will have the potential to improve in their research endeavors with the addition of cutting-edge MRI imaging. The addition of the MRI research team will fill a necessary void in the research programs of the university, yet it is only a first step towards the research imaging facility and infrastructure that is essential for TJU to advance their research programs.

**ISSUES FOR THE COLLEGE, UNIVERSITY AND HOSPITAL**

**Administrative Infrastructure** – The department’s administrative infrastructure has been progressively weakened in recent years because of cuts in radiology’s operating budget. As mentioned earlier in this report, presently, a single administrator (Victor Sarro) has total responsibility for both the department’s physician practice plan and all the department’s clinical operations. We pay half of Mr. Sarro’s salary for the former, while the hospital pays half for the latter. It is simply not possible to run an extraordinarily large and complex operation like ours with one-half of one single senior manager. As talented and dedicated as Mr. Sarro is, he needs additional high-level administrative support. I strongly believe that the department needs one more senior assistant manager with decision-making authority to take responsibility for most day-to-day clinical operations. This individual would report both to Mr. Sarro and to the hospital administration. Mr. Sarro would then be able to devote more of his time to practice plan, research operation, and financial management. I have compared notes with other academic radiology chairs and I feel our administrative infrastructure is severely short-staffed at the senior level.

**Adequate Funding for Faculty Salaries** – Because of the serious nationwide shortage of radiologists, there has been a recent sharp increase in their salaries, both in private practice and in academic departments.
The competition posed by very high incomes in private practice (and even some academic centers) makes it imperative that we at Jefferson maintain faculty incomes at appropriate levels. Even with the revenues from JCCI and all our other entrepreneurial activities, this will be difficult to do so, largely because of the high taxes and other costs imposed upon us by the university, as well as the high costs of malpractice insurance in the Philadelphia area. One of my top priorities is to recruit good new faculty and retain the many high quality faculty members we already have in the department. Offering competitive incomes and a supportive academic environment are the two primary means to achieving this. The college and hospital have devised a complex formula for determining their support of clinical faculty salaries — one that reflects payment for undergraduate medical education, indirect graduate medical education, medical leadership, and research indirects. Though I have been assured of satisfactory levels of support through the current and the next fiscal years, it will be crucial that regardless of how the calculations work out under that formula, adequate faculty salary support for radiology continues to be provided by the institution. Radiology is central to virtually all clinical activities throughout the hospital, and paying competitive faculty salaries is essential to maintaining a strong and effective department.

**Image Management and Distribution: Enterprise-Wide Initiative** — To create a successful healthcare delivery system with emphasis on patient safety, quality care, and efficient clinical operations, many hospitals, including TJUH, are now transitioning to the all-electronic radiology record as part of a broader electronic medical record. Radiology initiatives include such things as computerized order entry, all digital imaging, PACS, immediate report generation through voice recognition technology, and enterprise-wide distribution of images and reports using web technology to all parts of the campus and the offices of referring physicians of the full-time and volunteer faculty. All of this must be integrated through our RIS and incorporated into the HIS. This is a very complex and expensive undertaking, which requires close cooperation between radiology and the hospital's IT (information technology) groups. So far, the level of cooperation has been good and several of these projects are in progress. I am concerned that simultaneous implementation of several projects is becoming an overwhelming burden to the already-stressed faculty in the short term. I wish to reiterate the need for additional administrative infrastructure to ensure smooth and expedient implementation of the numerous IT projects.

**JUP** — There is a perception among many faculty physicians in the university that JUP does not represent the interests of the faculty. A number of individuals have expressed concerns about ever-increasing levels of overhead and billing costs, and budgetary restrictions. I feel JUP needs to be restructured in a way that it comes to represent the financial interests and career goals of the faculty. It should devote more of its efforts toward expanding the faculty practice, improving revenues and collections, reducing taxation and other business expenses, resolving interdepartmental
turf issues, facilitating research and education, and improving the overly complex budgeting process that the clinical departments are now subjected to.

**Radiology Assistant Program** – One way to help alleviate the serious shortage of radiologists, is to train and utilize radiology extenders. These individuals, now called radiology assistants (RA’s), are primarily experienced radiologic technologists with good patient skills and a good work ethic who are trained to perform certain procedures previously performed by radiologists themselves. In view of the shortages and higher workloads facing radiologists, it has been deemed safe and appropriate to allow RA’s to carry out these functions under close physician supervision. This past summer, a national conference on this subject was convened by the American College of Radiology and the concept was strongly endorsed. In other departments, RA’s are now doing things like GI fluoroscopy, placing PICC lines, thoracentesis and paracentesis under ultrasound guidance, tube checks and changes, arthrogram, therapeutic joint injections, DEXA scan interpretations, nontargeted liver and kidney biopsies, patient consents, and passing on reports to referring physicians. We need to develop several such positions within the department, which will require funding assistance from the hospital. The technologists who are chosen will have to be paid during their training period. Thereafter, when they actually start working, both the hospital and the department will jointly contribute to their salary support.

**Animal Imaging Core Facility** – Jefferson is in desperate need of an animal imaging research facility that would be under the auspices of radiology, but open to use by all campus investigators who need imaging capabilities to support their funded research. Major goals of the facility would include promoting research in areas like molecular and functional imaging. Radiology took the initiative and was successful in obtaining a $500,000 shared instrumentation grant from the NCI, which will facilitate the purchase of a small bore MRI for use in animal research. We have recently submitted another proposal for a larger, high-end instrumentation grant through the National Center for Research Resources. If successful, this will enable us to acquire a micro-PET/micro-CT with technical support from Philips to also be used for research. The department will also be getting a 3 Tesla MRI, which will be used for both clinical scanning and research. Even when all these plans come to fruition, there will still be the need for space allocation, funding of personnel, other infrastructure components, and perhaps the development of other imaging research instruments such as ultrasound or optical coherence tomography. We will need considerable financial support from the university to develop this kind of comprehensive imaging research center. In all likelihood, however, this center would become self-supporting fairly quickly, given the large contingent of funded investigators in the university who have stressed the need of such a facility.
DEPARTMENT OF RADIOLOGY
2002-2003

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Professor and Chairman

Geoffrey A. Gardiner, Jr., M.D. 
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Vice Chair for Research

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RESEARCH ASSOCIATE PROFESSORS
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William T. Shi, Ph.D.
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2002-2003

Demetrius H. Bagley, M.D., Associate Professor of Urology [primary]
Associate Professor of Radiology [secondary]

Robert L. Brent, M.D., Ph.D., Professor of Pediatrics [primary]
Professor of Radiology [secondary]

Ralph A. Carabasi, M.D., Professor of Surgery [primary]
Professor of Radiology [secondary]

Paul J. DiMuzio, M.D., Assistant Professor of Surgery [primary]
Assistant Professor of Radiology [secondary]

Mark B. Kahn, M.D., Associate Professor of Surgery [primary]
Associate Professor of Radiology [secondary]

Donald Meyers, M.D., Assistant Professor of Neurosurgery [primary]
Instructor of Radiology [secondary]

Stanton N. Smullens, M.D., Professor of Surgery [primary]
Associate Professor of Radiology [secondary]

Paul Walinsky, M.D., Professor of Medicine [primary]
Assistant Professor of Radiology [secondary]
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ABDOMINAL IMAGING  DIRECTED BY LAURENCE NEEDLEMAN, M.D.,
RICHARD J. WECHSLER, M.D.
Drs. Rick Feld, Antje Greenfield, Ethan Halpern, George Holland, Stephen Karasick,
Alfred Kurtz, Anna Lev-Toaff, Levon Nazarian,
Patrick O'Kane, Ana Salazar, Rosita Shah

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RESEARCH  Drs. Flemming Forsberg, Ji-Bin Liu, Andrew Maidment, Laurence Parker, William Shi,
Mathew Thakur and Mr. Daniel Beideck

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HOUSESTAFF ROSTER
2002-2003

RESIDENTS

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Ronald J. Dolin, M.D.
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Christopher T. Kirkpatrick, M.D.
Dayna Levin, M.D.

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Holly S. Gil, M.D.
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Tariq A. Quraishi, M.D.
Eric M. Rubin, M.D.
Hongyu Shi, M.D., Ph.D.

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Alex Langman, M.D.
Javed Iqbal Malik, M.D.
Jayshheel J. Mehta, M.D.
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Laurence J. Spitzer, M.D.

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Pratik R. Shukla, D.O.
Waseem Ullah, M.D.

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Barry J. Livstone, M.D.

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V. Sarro

Radiology Chairman
V.M. Rao, M.D.

Admin. Assistant
J. Gardner
2 Staff

Admin, Grants
A. Maitino
4 Staff

Research
12 Staff

Manager,
Admin Services
Janet Kott
67.3 Staff

Manager,
Comp Facility
Charles Lockard
1 Staff

Manager,
Rad Budget
Linda Torres
3 Staff

Manager,
Rad Tech Serv
Richard Blob
147 Staff

Manager,
US Tech
Larry Waldroup
41 Staff

Physics/PACS

Coord Tech
Serv BIC/
Mammo Center
D. Snell

Coord Satellite/
Gen. Radiology
E. Smith

Chief Tech
Gen. Radiology
C. Slovak

Chief
Sonographer
J. Darby

Institute
Hospital
Special
Purpose
Acct.

Coordinator
Gen. Studies

Coordinator
Vascular Lab

Coordinator
O/P US Facility

Coordinator
AEC

Billing
Prof./Tech.

Coord WPC/SEC
L. Massanova

Coord Pt
Registrars
D. Dimeo

Coordinator
Film Library
B. Rowe

Coordinator
Nuc. Med
D. Ramos

Supply
Coordinator

Timekeeper

Foundation
921 + 920 accts

Coordinators

Ford Road
Campus

Chief Tech
MRI/CT/
JHN/KOP
P. Natale

Chief Tech
2nd Shift
P. McCarthy

Coordinator
Weekend Shift
M. Armstrong

Coordinator
ORS
S. Orsini

Total # of Staff: 291
- Includes 28.18 FTEs funded by University (special purpose, overage, and college)
- 1.14 FTEs funded by Hospital special purpose account
PUBLICATIONS 2002-2003

JOURNAL ARTICLES:


BOOKS AND BOOK CHAPTERS:


**ABSTRACTS:**


101. Forsberg F: Elastography. Proceedings of the 32\textsuperscript{nd} Annual Scientific Meeting of the Australasian Society for Ultrasound in Medicine, Queensland, Australia, September 2002.

102. Forsberg F: New developments in contrast enhanced ultrasound. Proceedings of the 32\textsuperscript{nd} Annual Scientific Meeting of the Australasian Society for Ultrasound in Medicine, Queensland, Australia, September 2002.

103. Forsberg F: Ultrasound imaging of angiogenesis. Proceedings of the 32\textsuperscript{nd} Annual Scientific Meeting of the Australasian Society for Ultrasound in Medicine, Queensland, Australia, September 2002.

104. Forsberg F: Vascular 3D ultrasound imaging. Proceedings of the 32\textsuperscript{nd} Annual Scientific Meeting of the Australasian Society for Ultrasound in Medicine, Queensland, Australia, September 2002.


OKSANA H. BAL TAROWICH, M.D.

November 20, 2002  Department of Radiology Grand Rounds, Mercy Fitzgerald Hospital, Darby, PA
• "Transvaginal sonography"

May 13-16, 2003  The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
• "Adnexal masses: Usual and unusual appearances"

DIANE C. BERGIN, M.D.

• "MR imaging of rotator cuff disease"
• "Elbow MR anatomy"

May 4-9, 2003  103rd Annual Meeting of the American Roentgen Ray Society, San Diego, CA
• "Anterior cruciate ligament ganglia and mucoid degeneration: Coexistence and clinical correlation"
• "Temporal association between full thickness supraspinatus tendon tears and subscapularis tendon pathology on MR"
• "Multipartite patella: MR imaging features" (poster)

June 28-29, 2003  8th Annual Jefferson Lower Extremity Advanced Imaging Symposium, Philadelphia, PA
• "MRI of extensor mechanism"
• "Impingement syndromes of the ankle"

JOSEPH BONN, M.D.

September 28-29, 2002  Vascular and Interventional Fellowship Program Directors Conference, Atlanta, GA
• "The Residency Review Committee requirements for vascular and interventional radiology fellowships"

March 27- April 1, 2003  28th Annual Scientific Meeting of the Society of Cardiovascular and Interventional Radiology, Salt Lake City, UT
• "CIRREF 2003: Where we are and where we are going"
• "Conscious sedation"

W. SCOTT ENOCHS, M.D., PH.D.

• "Nomenclature of degenerative spine imaging"
DAVID J. ESCHELMAN, M.D.

March 27- April 1, 2003  28th Annual Scientific Meeting of the Society of Cardiovascular and Interventional Radiology, Salt Lake City, UT

• “Infectious complications of implantable venous access devices in patients with sickle cell disease” (poster) SIR 2003 Scientific Program Award - High Honors

June 21, 2003  23rd Annual Advances in Gastroenterology, Atlantic City, NJ

• “Non-surgical management of hepatic malignancy”

RICK I. FELD, M.D.

August 12, 2002  Monmouth Medical Center, Monmouth, NJ

• “Scrotal ultrasound”
• “Iatrogenic groin injuries: Compression repair versus thrombin injection”

May 31- June 4, 2003  47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting of the World Federation for Ultrasound in Medicine, Montreal, Canada

• “Just images: Interventional ultrasound consult service”
• “Film panelist: Non-obstetrical ultrasound”

ADAM E. FLANDERS, M.D.

August 21, 2002  Department of Rehabilitation Medicine, Resident Education Series, Thomas Jefferson University Hospital, Philadelphia, PA

• “Spinal cord imaging”

October 26-27, 2002  Jefferson Spine Imaging Symposium, Jefferson Medical College, Philadelphia, PA (co-director and course coordinator)

• “Vascular diseases of the spinal cord”

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL

• “Radiology informatics: Standards and data architecture” (co-moderator)
• “Radiology informatics: The IHE initiative and systems, and applications integration II” (co-moderator)
• “How your radiology practice can ‘work the web’” (refresher course)
• “Introduction to PowerPoint presentations: Advanced skills” (refresher course)
• “How to get radiologic images onto your personal computer” (refresher course)
• “Introduction to PowerPoint presentations: Basic skills” (refresher course)
March 21-22, 2003  
Cerebrovascular Update 2003: Medical Management of Cerebrovascular Diseases, Philadelphia, PA  
• “Advances in imaging in acute cerebrovascular disease”

March 30, 2003  
Philadelphia Yoga Research Society, Philadelphia, PA  
• “Secrets of the mind: An imaging perspective”

FLEMMING FORSBERG, PH.D.

July 3-7, 2002  
14th Congress of European Federation of Societies for Ultrasound in Medicine and Biology, Warsaw, Poland  
• “Elastography: Using ultrasound for palpation”  
• “Advances in ultrasound contrast imaging”  
• “Ultrasound imaging of angiogenesis and anti-angiogenesis therapy”

July 19, 2002  
Advanced Logiq 700 Technology, GE Medical Systems, Milwaukee, WI  
• “New developments in ultrasound contrast imaging”

September 16, 2002  
Toshiba Australia Pty Meeting, St. George Hospital, Sydney, Australia  
• “Imaging of angiogenesis”  
• “Advances in ultrasound technology – An overview”

September 17, 2002  
Canberra Hospital, Department of Medical Imaging, Canberra, Australia  
• “Imaging of angiogenesis”  
• “Advances in ultrasound technology – An overview”

September 18, 2002  
Alfred Hospital, Vascular Laboratory, Melbourne, Australia  
• “Vascular 3D ultrasound imaging”  
• “Advances in ultrasound technology – An overview”

September 18, 2002  
Toshiba Australia Pty Meeting, Epworth Hospital, Melbourne, Australia  
• “Imaging of angiogenesis”  
• “Advances in ultrasound technology – An overview”

September 19-22, 2002  
32nd Annual Meeting of the Australasian Society for Ultrasound in Medicine, Gold Coast, Queensland, Australia  
• “Vascular 3D ultrasound imaging”  
• “New developments in contrast enhanced ultrasound”  
• “Elastography”  
• “Ultrasound imaging of angiogenesis”

September 25-28, 2002  
Era of Hope, The Department of Defense Breast Cancer Research Meeting, Orlando, FL  
• “Excitation enhanced imaging for improved breast cancer detection” (poster)  
• “Contrast enhanced subharmonic ultrasound imaging” (poster)
October 28, 2002  Translational Research Opportunities in Cancer Imaging, Kimmel Cancer Center, Thomas Jefferson University, Philadelphia, PA  
  • “Ultrasound imaging of angiogenesis”

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL  
  • “Breast cancer diagnosis with 3D contrast enhanced US”  
  • “In vitro and in vivo noninvasive pressure estimation with US microbubble contrast agents”  
  • “Excitation enhanced US contrast imaging in vitro and in vivo”  
  • “Principles of Doppler imaging”  
  • “Contrast enhanced TRUS for prostate tumor detection in a canine model”

February 14-15, 2003  8th Ultrasound Contrast Research Symposium in Radiology, San Diego, CA  
  • “Contrast-enhanced ultrasound imaging for sentinel lymph node detection in a melanoma swine model”

March 21, 2003  Advanced Logiq 700 Technology, GE Medical Systems, Milwaukee, WI  
  • “New developments in ultrasound contrast imaging”

April 9, 2003  Advanced Logiq 700 Technology, GE Medical Systems, Milwaukee, WI  
  • “New developments in ultrasound contrast imaging”

May 13-16, 2003  The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA  
  • “Contrast enhanced TRUS for prostate tumor detection in a canine model”  
  • “Pulse inversion harmonic imaging for breast cancer diagnosis”  
  • “In vivo subharmonic imaging and pressure estimation”

May 19, 2003  Medical Ultrasound Workshop, Ultrasonic Industry Association, New York City, NY  
  • “Prostate ultrasound: Contrast enhanced TRUS of a novel canine prostate cancer model”

May 31-
June 4, 2003  47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting of the World Federation for Ultrasound in Medicine, Montreal, Canada  
  • “Effect of local anesthesia on contrast-enhanced detection of prostatic blood flow in a canine model”  
  • “Gray scale harmonic imaging of prostatic blood flow during infusion of imaging”  
  • “Effect of shell type on the in vivo backscatter from polymer encapsulated microbubbles”  
  • “Real time excitation enhanced ultrasound contrast imaging”  
  • “Nonlinear imaging with a new contrast agent”  
  • “Pulse inversion harmonic imaging for breast cancer diagnosis”

June 11, 2003  Advanced Logiq 700 Technology, GE Medical Systems, Milwaukee, WI  
  • “New developments in ultrasound contrast imaging”
DAVID P. FRIEDMAN, M.D.

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- “Carotid stenting: Who is performing it, how often, and where? A survey of academic and non-academic radiology practices”
- “Thrombolysis of the carotid and vertebral arteries: Who is performing it, how often, and where? A survey of academic and non-academic radiology practices”
- “Treatment of intracranial aneurysms with GDC coils: Who is performing it, how often, and where? A survey of academic and non-academic radiology practices”

April 27-May 2, 2003  41st Annual Meeting of the American Society of Neuroradiology, Washington, DC
- “How often do neuroradiologists perform Doppler ultrasound of the carotid arteries? A survey of academic and non-academic radiology practices”
- “Who performs carotid/vertebral conventional cat angiography? A survey of academic and non-academic radiology practices”

BARRY B. GOLDBERG, M.D.

July 3-7, 2002  14th Congress of European Federation of Societies for Ultrasound in Medicine and Biology, Warsaw, Poland
- “3-D ultrasound vascular imaging”
- “Evaluation of the effectiveness of the ‘Teaching the Teachers’ ultrasound training program”
- “Advances in ultrasound contrast agents”

September 18, 2002  Gastroenterology Research Conference, Thomas Jefferson University, Philadelphia, PA
- “Contrast-enhanced ultrasound”

September 23, 2002  14th National Congress of the Italian Society of Ultrasonology, Padova, Italy
- “Advances in ultrasound imaging: 3-dimensional, endoluminal and contrast-enhanced imaging”

October 24, 2002  Annual Fellows Meeting, Society of Radiologists in Ultrasound, San Francisco, CA
- “Contrast-enhanced lymph node detection”

November 2-7, 2002  12th World Congress of Ultrasound in Obstetrics and Gynecology, New York, NY
- “Ultrasound contrast agents: Potential usefulness in women’s imaging”

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- “AIDS imaging – A worldwide problem”
- “Beginning an academic career”
• "Contrast-enhanced sonographic detection of sentinel lymph nodes and lymphatic channels in swine with melanoma tumors"

February 21-23, 2003 The Latin America Leading Edge in Diagnostic Ultrasound, Sao Paulo, Brazil
• "Advances in diagnostic 3-D ultrasound imaging"
• "Advances in ultrasound contrast agents"
• "World-wide ultrasound education and certification"

May 13-16, 2003 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
• "Contrast imaging of lymph nodes"

May 31-June 4, 2003 47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting of the World Federation for Ultrasound in Medicine, Montreal, Canada
• "Developing a role for the world federation of sonographers: Challenges of international partnerships"
• "How to develop an effective ultrasound research program"
• "Abdominal ultrasound contrast agents: Current status"
• "History of ultrasound in medicine"
• "World-wide ultrasound education: Past, present and future"
• "Contrast-enhanced lymphatic ultrasound imaging (lymphosonography) of sentinel lymph nodes in a melanoma animal model"
• "Contrast-enhanced ultrasound of lymphatic channels and lymph nodes: Preliminary experiences"

CARIN F. GONSALVES, M.D.

March 27-April 1, 2003 28th Annual Scientific Meeting of the Society of Cardiovascular and Interventional Radiology, Salt Lake City, UT
• "Venous ulcers"
• "Complications of a percutaneous suture-mediated closure device versus manual compression for arteriotomy closure: A case-controlled study"

ETHAN J. HALPERN, M.D.

October 6-9, 2002 60th Annual Meeting of the Mid-Atlantic Section, American Urological Association, Baltimore, MD
• "Comparison of an unrestricted targeted approach to a sextant approach for contrast-enhanced biopsy of a prostate"

December 1-6, 2002 88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
• "High frequency Doppler imaging of the prostate for cancer detection"
• "Optimal threshold for a diagnostic test when disease is characterized by a continuous level of severity"
April 26- May 1, 2003  98th Annual Meeting of the American Urological Association, Chicago, IL
  • “Value of high-frequency Doppler ultrasound for prostate cancer detection”

May 13-16, 2003  The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
  • “Contrast imaging for prostate cancer detection”
  • “Upper extremity venous disease”

May 31- June 4, 2003  47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting of the World Federation for Ultrasound in Medicine, Montreal, Canada
  • “Detection of prostate cancer with high frequency Doppler imaging”
  • “Comparison of unrestricted targeted biopsy to targeted sextant biopsy of the prostate”
  • “Effect of local anesthesia on contrast-enhanced detection of prostatic blood flow in a canine model”
  • “Gray scale harmonic imaging of prostatic blood flow during infusion of Imagent®”
  • “Pseudomass of the bladder neck after prostatectomy”
  • “Doppler detection of arterial stenosis: Defining the optimal threshold for a diagnostic test when disease is characterized by a continuous level of severity”

CHARLES M. INTENZO, M.D.

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
  • “Comparison of the relative roles of radiologists and non-radiologists in stress myocardial perfusion imaging between 1996 and 2000: An ominous trend”
  • “High incidence of pulmonary embolism in young women due to contraceptive use: Reality or emergency physicians’ fantasy?”
  • “Is dual-phase parathyroid scintigraphy for parathyroid adenoma detection necessary or are delayed images by themselves sufficient?”
  • “Is radiiodine-induced radiation gastritis dose-dependent?”
  • “The use of SPECT in the localization of eutopic parathyroid adenomas before neck exploration: Is there a role?”
  • “Predictor variable of In-111-ProstaScint for evaluation of prostate cancer: Follow-up with clinical outcome” (exhibit)

DAVID KARASICK, M.D.

  • “Neoplasms of the axial skeleton”
November 12, 2002  
Department of Radiology Grand Rounds, Hospital of the University of Pennsylvania, Philadelphia, PA  
- "Imaging of spine fusion complications"

December 1-6, 2002  
88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL  
- "Painful bony variants of the foot" (exhibit)

February 22-23, 2003  
7th Annual Jefferson Upper Extremity Imaging Symposium, Philadelphia, PA  
- "Radiographic evaluation of the shoulder"  
- "Radiographic evaluation of the elbow & wrist"

April 4-6, 2003  
Annual Meeting of Orthopedics & Sports Imaging, New York, NY  
- "Knee trauma: CT evaluation"  
- "Ankle & foot trauma: Radiographic aspects"

May 4-9, 2003  
103rd Annual Meeting of the American Roentgen Ray Society, San Diego, CA  
- Foot and ankle session (moderator)

June 28-29, 2003  
8th Annual Jefferson Lower Extremity Advanced Imaging Symposium, Philadelphia, PA  
- "Imaging of arthritis"  
- "Tumors and tumor-like conditions"

STEPHEN KARASICK, M.D.

November 18, 2003  
Novartis Center of Excellence Program, Novartis Pharmaceuticals, Philadelphia, PA  
- "Introduction to IBS"

January 24, 2003  
Novartis Center of Excellence Program, Novartis Pharmaceuticals, Philadelphia, PA  
- "Introduction to IBS"

April 7, 2003  
Novartis Center of Excellence Program, Novartis Pharmaceuticals, Philadelphia, PA  
- "Introduction to IBS"

SUNG M. KIM, M.D.

December 1-6, 2002  
88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL  
- "Effect of stereotactic radiosurgery on tumor blood flow assessed by dynamic octreotide brain SPECT in skull base meningioma" (poster)  
- "Predictor variable of In-111-ProstaScint for evaluation of prostate cancer: Follow-up with clinical outcome"
ALFRED B. KURTZ, M.D.

September 24, 2002  D.C. Metropolitan Radiological Society, Washington, DC
  • Resident unknown case presentation
  • “Second and third trimester obstetrical emergencies”

October 17-19, 2002  15th Annual Review Course: Advanced Ultrasound Techniques in Obstetrics and Gynecology, Phoenix, AZ
  • “Current and future trends in ultrasound”
  • “Detection of ovarian cancer with comparison to CT and MRI”
  • “Ultrasound in the first trimester”

November 2-7, 2002  12th World Congress of Ultrasound in Obstetrics and Gynecology, New York, NY
  • “Ultrasound in widespread ovarian disease”

May 13-16, 2003  The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA (co-director)
  • Advances in Ob/Gyn session (moderator)
  • “The normal first trimester examination”
  • “The fetal GI tract”

ANNA S. LEV-TOAFF, M.D.

October 3, 2002  Philadelphia Roentgen Ray Society, Philadelphia, PA
  • “Sonohysterography using 2D and 3D ultrasound”

November 2-7, 2002  12th World Congress of Ultrasound in Obstetrics and Gynecology, New York, NY
  • “Evaluation of uterine malformations”

November 18, 2002  New York Roentgen Ray Society, New York, NY
  • “3-D sonography in gynecologic imaging”
  • “Sonohysterography: Technical and diagnostic aspects”

December 11, 2002  National Diagnostic Imaging Symposium, Lake Buena Vista, FL
  • “Sonohysterography: Practical value and technical pointers”
  • “3D ultrasound in gynecology”

December 26, 2002  Hadassah University Hospital, Department of Obstetrics and Gynecology, Jerusalem, Israel
  • “Three-dimensional ultrasound: A problem-solving tool in gynecology”

January 8, 2003  Pennsylvania Hospital, Department of Radiology, Philadelphia, PA
  • “Sonohysterography: Diagnostic and technical aspects”

March 21-23, 2003  Fetal and Women’s Ultrasound 2003, Atlanta, GA
  • “3-D ultrasound: A problem-solving tool in gynecology”
  • “Sonohysterography: 2-D and 3-D”
  • “Technical aspects and operation of 3-D/4-D equipment with live scanning”

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May 13-16, 2003  The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
  •  “Sonohysterography: An update”

May 31- June 4, 2003  47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting of the World Federation for Ultrasound in Medicine, Montreal, Canada
  •  “Meet the professor: Sonohysterography”
  •  “3-D ultrasound in gynecology: Sonohysterography”
  •  “Just images: Sonohysterography”

JI-BIN LIU, M.D.

July 8, 2002  Third Hospital of Beijing Medical University, Beijing, China
  •  “Intraoperative ultrasound: Diagnosis and therapy”

July 11, 2002  Xinjiang Medical University First Hospital, Wulumuqi, Xinjiang, China
  •  “Review of new advances in diagnostic ultrasound”

July 16, 2002  Sichuan Provincial Hospital, Chengdu, China
  •  “Laparoscopic ultrasound: Its role in laparoscopic surgery”
  •  “Ultrasound-guided radiofrequency ablation of liver tumors”
  •  “2D and 3D endoluminal ultrasound: Clinical applications”
  •  “Current status of ultrasound contrast agents”
  •  “Transvaginal sonohysterography”

July 19, 2002  Second Hospital of Chongqing University of Medical Sciences, Chongqing, China
  •  “Ultrasound-guided radiofrequency ablation of liver tumors”
  •  “Current status of ultrasound contrast agents”
  •  “Laparoscopic ultrasound: Its role in laparoscopic surgery”
  •  “Transvaginal sonohysterography”

October 3, 2002  Symposium of New Advances in Medicine, Changchun, China
  •  “Medical ultrasound: Yesterday, today and tomorrow”

October 9, 2002  Shenzhen Red Cross Hospital, Shenzhen, China
  •  “Ultrasound-guided radiofrequency ablation of liver tumors”
  •  “Ultrasound contrast imaging”
  •  “Transvaginal sonohysterography”

October 17, 2002  Taichung Veterans General Hospital, Taichung, Taiwan
  •  “2-D and 3-D endoluminal ultrasound”
  •  “Contrast-enhanced ultrasound imaging”
  •  “Transvaginal sonohysterography: Its role in clinical practice”
  •  “Laparoscopic ultrasound: Its role in laparoscopic surgery”

October 17, 2002  Taichung Society of Radiology, Jen-Ai Hospital, Taichung, Taiwan
  •  “Ultrasound-guided radiofrequency ablation of tumors”

October 18, 2002  Taipei Veterans General Hospital, Taipei, Taiwan
  •  “Ultrasound-guided treatment of tumors by RFA”
October 20, 2002  2002 Annual Convention of the Society of Ultrasound in Medicine, ROC, Taipei, Taiwan
  • "Ultrasound-guided radiofrequency ablation of liver tumors"

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
  • "The value of transureteral ultrasound for the upper urinary tract: Experiences with a reusable catheter probe" (poster)
  • "High-resolution endoluminal ultrasound evaluation of the risk of esophageal variceal bleeding" (poster)

March 4, 2003  The Drexel-Jefferson Academic Alliance Course for Biomedical Engineering, Philadelphia, PA
  • "Laparoscopic ultrasound"
  • "2D and 3D endoluminal ultrasound"

April 22, 2003  5th Annual Research Day at Drexel University, Philadelphia, PA
  • "Comparing contrast-enhanced ultrasound to angiogenic markers from melanoma in a murine model" (Dean's Award)

May 31-June 4, 2003  47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting of the World Federation for Ultrasound in Medicine, Montreal, Canada
  • "Endoluminal two-dimensional and three-dimensional sonography"

CHRISTOPHER R.B. MERRITT, M.D.

October 30, 2002  International Breast Ultrasound School, Chicago, IL
  • "BIRADS breast ultrasound lexicon"

October 31, 2002  Breast Imaging Symposium, Northwestern University, Feinberg School of Medicine, Chicago, IL
  • "Breast ultrasound: Physics, equipment & techniques"
  • "Using US BIRADS – Case studies"

March 27-April 1, 2003  28th Annual Scientific Meeting of the Society of Cardiovascular and Interventional Radiology, Salt Lake City, UT
  • "Image guided intervention: Ultrasound innovations"

May 13-16, 2003  The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
  • "Breast ultrasound physics"
  • "Diagnostic criteria and the ACR breast ultrasound lexicon"

May 19, 2003  Medical Ultrasound Workshop, Ultrasonic Industry Association, New York City, NY
  • "In vivo elastography: Feasibility studies"
DONALD G. MITCHELL, M.D.

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- "Noncirrhotic liver MR advanced imaging"
- "Functional and anatomic evaluation of the biliary tree with cholangiography trisodium-enhanced functional magnetic resonance cholangiography"

WILLIAM B. MORRISON, M.D.

July 26-28, 2002  International CT / MRI Conference 2002, Gold Coast, Queensland, Australia
- "MRI of the knee"
- "MRI of the shoulder"
- "Imaging of shoulder instability"
- "MRI of the hip"

October 5-6, 2002  North Carolina Rheumatology Association Annual Meeting, Greensboro, North Carolina
- "Imaging of arthritis"

- "Imaging of inflammatory spondyloarthropathies"

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- "Worldwide utilization of MR imaging: Analysis of exam type and geographic region, 1993-2000"

January 16-17, 2003  Wilford Hall Medical Center, Lackland AFB, San Antonio, TX
- "MRI of the knee"
- "Interesting cases"
- "MR arthrography"

- "Imaging algorithms"
- "Elbow MR pathology"

March 2-5, 2003  Society of Skeletal Radiology 2003 Annual Meeting, Coronado, CA
- "MR arthrography: Direct vs. indirect" (special focus session)

March 7-10, 2003  Solving the Riddle of the Wrist: Diagnosis, Management and Rehabilitation, Hand Rehabilitation Foundation Surgeons Symposium, Philadelphia, PA
- "MRI of the wrist"
- "Imaging of carpal instability"

April 23, 2003  Christiana Hospital, Department of Radiology, Newark, DE
- Board review
May 4-9, 2003  103rd Annual Meeting of the American Roentgen Ray Society, San Diego, CA
  • "MRI of the knee: Morphology vs. mechanics" (keynote lecture)

May 17, 2003  Injuries Associated with Basketball, Temple Sports Medicine Symposium, Wildwood, NJ
  • "MRI of the ankle"
  • "MRI of bone bruises and fractures"

May 21, 2003  Mercy Catholic Medical Center, Philadelphia, PA
  • Board review

June 5-8, 2003  Musculoskeletal Imaging Symposium, Massachusetts General Hospital, Boston, MA
  • Ankle and wrist session (moderator)
  • "MRI of the elbow"
  • "MRI of the sternoclavicular and acromioclavicular joints"
  • "MRI of the ankle"
  • "Spine infection and DDx"
  • "The diabetic foot"

June 11, 2003  Pennsylvania Hospital, Department of Orthopedic Surgery, Philadelphia, PA
  • "Imaging of shoulder instability"

June 28-29, 2003  8th Annual Jefferson Lower Extremity Advanced Imaging Symposium, Philadelphia, PA
  • "MRI of the hip: Labral tear"
  • "Cartilage imaging"
  • "MRI of the cruciates and collaterals"
  • "The calf and shin: Compartment syndrome to medical stress"
  • "Imaging of lower extremity infection"
  • "MRI of the ankle ligaments: Tears, healing and complications"
  • "Imaging of neuropathic disease"
  • "The plantar plate, morton neuroma and sesamoids"

LEVON N. NAZARIAN, M.D.

September 12, 2002  Department of Medicine Grand Rounds, Division of Rheumatology, Thomas Jefferson University, Philadelphia, PA
  • "General concepts of musculoskeletal ultrasound"

October 19-20, 2002  Fifth Annual North American Symposium on Musculoskeletal Ultrasound, Toronto, Ontario, Canada
  • "Common pathology of the ankle and foot"
  • "Interventional musculoskeletal ultrasound"
  • Hands-on scanning sessions (instructor)

October 25-27, 2002  12th Annual Meeting and Postgraduate Course of the Society of Radiologists in Ultrasound, San Francisco, CA
  • Ultrasound of the shoulder session (moderator)
- "Diagnostic and therapeutic interventions in musculoskeletal ultrasound with emphasis on the shoulder"
- Hands-on scanning sessions (instructor)

December 1-6, 2002
88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- "Quantitative acoustic evaluation of skin conditions in patients with scleroderma"
- "Trends in nationwide utilization of musculoskeletal ultrasound: A five-year analysis of the Medicare population"

February 5, 2003
Columbia University College of Physicians and Surgeons, Department of Radiology, New York, NY
- "Musculoskeletal ultrasound in sports medicine" (grand rounds)
- "General concepts of musculoskeletal ultrasound"
- Resident case presentations

February 20, 2003
Phoenix Ultrasound Society, Phoenix, AZ
- "General concepts of musculoskeletal ultrasound"
- "Musculoskeletal ultrasound in sports medicine"

February 26, 2003
University of Maryland Medical Center, Department of Radiology, Baltimore, MD
- "Musculoskeletal ultrasound in sports medicine" (grand rounds)
- Resident case presentations

March 13, 2003
Joan and Sanford I. Weill Medical College of Cornell University, Department of Radiology, New York, NY
- "Sports ultrasound" (grand rounds)
- Resident case presentations

April 30, 2003
Northwestern University, Feinberg School of Medicine, Department of Radiology, Chicago, IL
- "Sports ultrasound" (grand rounds)
- "General concepts of musculoskeletal ultrasound"
- Resident case presentations

May 13-16, 2003
The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
- Musculoskeletal ultrasound session (director and moderator)
- "General concepts of musculoskeletal ultrasound"
- "Ultrasound of the foot and ankle"
- "Musculoskeletal soft tissue masses"
- "Ultrasound in sports medicine: The radiologist’s perspective"

May 31-
June 4, 2003
47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting of the World Federation for Ultrasound in Medicine, Montreal, Canada
- "Musculoskeletal ultrasound: Joints and tendons" (moderator)
- "Detection of tendon tears by ultrasound-guided fluid injection"
- "Meet the professor session: Musculoskeletal ultrasound"
- "Ankle ultrasound"
LAURENCE NEEDLEMAN, M.D.

October 25-27, 2002 12th Annual Meeting and Postgraduate Course of the Society of Radiologists in Ultrasound, San Francisco, CA
- "Panel discussion: Controversies in Doppler evaluation of the carotid artery"
- Vascular case studies

November 22-23, 2002 Advances in Vascular Diagnostics, Montefiore Symposium on Vascular Ultrasound, sponsored by Montefiore Medical Center, New York, NY
- "MRA vs CTA vs Duplex for diagnosis of carotid stenosis: Which is best and why?"
- "Clinical entities that can mimic lower extremity DVT"
- Super panel on venous disease and diagnosis
- "The vascular lab medical director: A radiologist's perspective"
- Panel Discussion
- "Advanced carotid imaging and interpretation"
- "There is high systolic flow (in the carotid arteries): What does that mean?" (categorical course)

December 1-6, 2002 88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- "There is high diastolic flow: What does that mean?"
- "Discrepancies between carotid duplex sonography and CT angiography: Resolution using consensus readings"

February 13, 2003 New York Hospital, New York, NY
- "Carotid ultrasound"
- Case studies

February 21-23, 2003 The Latin America Leading Edge in Diagnostic Ultrasound, Sao Paulo, Brazil
- "Renal artery stenosis"
- "Diagnosis and treatment of femoral artery injuries"
- "By-pass graft evaluation"

March 25, 2003 New England Society of Ultrasound in Medicine, Cambridge, MA
- "Vascular ultrasound"

March 26-29, 2003 Ultrasound/Women's Imaging 2003, sponsored by Brigham and Women's Hospital, Boston, MA
- "Carotid ultrasound and Doppler"
- "Abdominal Doppler"
- "Ultrasound contrast"

May 13-16, 2003 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
- "Controversies in venous ultrasound"
- "Diastolic flow in health and disease"
- Case studies

June 10, 2003 Greater Delaware Valley Ultrasound Society, Philadelphia, PA
• “Vascular ultrasound”

PATRICK L. O’KANE, M.D.

December 17, 2002  Department of Radiology Grand Rounds, Fitzgerald-Mercy Hospital, Philadelphia, PA
  • “Sonography of the pancreas and spleen”

March 5-6, 2003  University of Arizona, Tucson, AZ
  • “Recent advances in ultrasound”

May 31- 47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting of the World Federation for Ultrasound in Medicine, Montreal, Canada
  • “Gallbladder function in patients with irritable bowel syndrome”

May 31-June 4, 2003

J. ANTONI PARELLADA, M.D.

  • “Basic MR physics”

  • “Musculoskeletal MR protocols”
  • “The other tendons: The biceps and the pectoralis major”
  • “MR of gleno-humeral instability”

June 28-29, 2003  8th Annual Jefferson Lower Extremity Advanced Imaging Symposium, Philadelphia, PA
  • “MRI: Basic principles”
  • “Hip/Pelvis – Peri-articular injury & disease”

LAURENCE PARKER, PH.D.

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
  • “Utilization, cost and cost substitution in musculoskeletal imaging: Trends and projections, 1996 to 2000 nationwide Medicare data”
  • “Increased utilization and costs of neuroimaging: Trends from 1996 to 2000 nationwide Medicare data and projections for 2005 and 2010”

May 4-9, 2003  103rd Annual Meeting of the American Roentgen Ray Society, San Diego, CA
  • “Changes in non-invasive versus percutaneous evaluation of abdominal arterial disease”
CATHERINE W. PICCOLI, M.D.

August 10-11, 2002  Current Trends in Breast Ultrasound, American Institute of Ultrasound in Medicine Regional Course Series, New York, NY
  • “BIRADS ultrasound”
  • “Tissue harmonic imaging and compound imaging”
  • “Ultrasound of breast implants”

September 17, 2002  Mammography Society of Philadelphia and Greater Delaware Valley Ultrasound Society, Methodist Hospital, Philadelphia, PA
  • “Breast ultrasound update 2002”

October 16, 2002  Pennsylvania Hospital, Department of Radiology, Philadelphia, PA
  • “Breast ultrasound: BIRADS”

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
  • “Clinical evaluation of a full-field digital mammography system”

May 4-9, 2003  103rd Annual Meeting of the American Roentgen Ray Society, San Diego, CA
  • “Ultrasound-guided breast procedures”

May 31 - June 4, 2003  47th Annual Convention of the American Institute of Ultrasound in Biology and Medicine / 10th Annual Meeting if the World Federation for Ultrasound in Medicine, Montreal, Canada
  • “Screening breast ultrasound: Invasive malignancy and ductal carcinoma in situ”
  • “BIRADS lexicon for ultrasound”

June 11, 2003  Grand Rounds, Atlantic Medical Imaging, Galloway, NJ
  • “Breast sonography: New BIRADS lexicon for ultrasound”

VIJAY M. RAO, M.D.

December 1-6, 2002  88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
  • “Sinonasal imaging: Normal anatomy, anatomic variants, and inflammation”

April 9-12, 2003  Association of University Radiologists 51st Annual Meeting, Miami, FL
  • “The challenge to the chairs: Changing graduate medical education”
  • “Restructuring the residency program panel discussion: What, why, and when”

April 30, 2003  Executive Leadership in Academic Medicine, Bryn Mawr, PA
  • “Financial trend analysis for Jefferson Medical College compared with national trends”
MARK E. SCHWEITZER, M.D.

July 23, 2002  Armed Forces Institute of Pathology, Washington, DC
  • “MR of the elbow”

September 25, 2002  Interventional Society of Skeletal Radiology, Geneva, Switzerland
  • “Post-operative knee”
  • “Pathology of tendons disorders”

October 1-7, 2002  41st Annual Scientific Meeting of the Royal Australian and New Zealand College of Radiologists, Adelaide, Australia
  • “MR of the wrist”
  • “MR of the hip and pelvis”
  • “MR of the elbow”
  • “MR of sports injuries”
  • “Cosmics of radiology: Comparison of Australia vs. United States”

November 14, 2002  Oregon Radiology Society, Portland, OR
  • “Pathology of tendons disorders”

December 13, 2002  Armed Forces Institute of Pathology, Washington, DC
  • “MRI of the elbow”

December 15, 2002  Winthrop University Hospital, Long Island, NY
  • “MRI of the foot”

January 27, 2003  Japanese Magnetic Resonance Imaging Society, Awaji, Japan
  • “MR of spine marrow”

January 27-28, 2003  University of Nagasaki, Nagasaki, Japan
  • “Musculoskeletal infections”
  • “MRI of the hip”

January 29, 2003  University of Kobe, Kobe, Japan
  • “Musculoskeletal infections”

January 30, 2003  Kobe Radiology Today, Kobe, Japan
  • “MRI of sports injuries to the elbow”
  • “MRI of ankle sports injuries”

  • “MR of the post-operative upper extremity”
  • “MR of wrist marrow disorders”

May 1, 2003  Armed Forces Institute of Pathology, Washington, DC
  • “MRI of the elbow”

May 4-9, 2003  103rd Annual Meeting of the American Roentgen Ray Society, San Diego, CA
  • “Pathophysiology of tendons”
  • “High vs. low field musculoskeletal MRI”
June 28-29, 2003 8th Annual Jefferson Lower Extremity Advanced Imaging Symposium, Philadelphia, PA
- "Pathophysiology of tendon disorders"
- "MR of the post-operative ankle"
- "MR of ankle marrow"
- "Controversies in foot and ankle imaging"

ROSITA M. SHAH, M.D.

August 27, 2002 Armed Forces Institute of Pathology, Washington, DC
- "Usual and unusual pulmonary infection"

October 25, 2002 Armed Forces Institute of Pathology, Washington, DC
- "Usual and unusual pulmonary infection"

December 1-6, 2002 88th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- "Significance of ground glass opacity at long-term follow-up in scleroderma"

March 2-6, 2003 21st Annual Meeting of the Society of Thoracic Radiology, Miami, FL
- "The expanded spectrum of smoking-related disease"

May 4-9, 2003 103rd Annual Meeting of the American Roentgen Ray Society, San Diego, CA
- "Bacterial pneumonias"

May 19, 2003 Armed Forces Institute of Pathology, Washington, DC
- "Usual and unusual pulmonary infection"

KEVIN L. SULLIVAN, M.D.

March 27-
April 1, 2003 28th Annual Scientific Meeting of the Society of Cardiovascular and Interventional Radiology, Salt Lake City, UT
- "Correlation between infrarenal IVC shape and morphology via intravascular and ultrasound during filter placement"
- "Comparison of the Trapease and Greenfield inferior vena cava filter by CT"
- "Infectious complications of implantable venous access devices in patients with sickle cell disease"
- "Complications of a percutaneous suture mediated closure device versus manual compression for arteriotomy closure"
- "Response of melanoma metastatic to liver following immunoembolization"

April 29-
May 2, 2003 End Stage Renal Disease - Keystone Conference: Society of Interventional Radiology, Orlando, Florida
- "Quick aspiration method with a 20 milliliter syringe to predict inadequate flow rates of tunneled dialysis catheters during dialysis"
MATHEW L. THAKUR, PH.D.

August 31- September 4, 2002 European Association of Nuclear Medicine Annual Congress, Vienna, Austria
- “VIP analogs: Pre-clinical and clinical results”
- “Targeting experimental venous thrombosis and pulmonary embolism”

September 26-28, 2002 Advances in Nuclear Medicine and in Radiopharmaceuticals, International Meeting, Cabo Frio, Brazil
- “Current trends in development of new radiopharmaceuticals”
- “Inflammation and infection: Studies with novel radiopharmaceuticals”

September 29 - October 4, 2002 8th Congress of the World Federation of Nuclear Medicine and Biology, Santiago, Chile
- “Radiopharmaceuticals for infection: Now and the future”
- “Imaging oncogene expression”

October 5, 2002 International Society of Radiolabeled Blood Elements, World Federation of Nuclear Medicine and Biology Post-Congress, Santiago, Chile
- “Future directions in imaging vascular thrombosis and pulmonary embolism”
- “Radiolabeled peptides”

February 16-20, 2003 Biomolecular Sensors Program Investigators Meeting, National Cancer Institute, San Diego, CA
- “Imaging oncogene expression with Tc-99m-PNA”

April 11-12, 2003 The 11th International Meeting of the International Society of Radiolabeled Blood Elements, Coimbra, Portugal
- “Radiolabeled blood elements: Future directions”

May 10-14, 2003 16th National Congress of Turkish Society of Nuclear Medicine, Samsun, Turkey
- “Future directions in radiopharmaceutical research”
- “Imaging oncogene with Tc-99m biomolecules”

May 28-30, 2003 XIX Congress of the Association of Latin American Societies of Biology and Nuclear Medicine, Cancun, Mexico
- “Future directions in oncologic imaging”
- “Imaging infection/inflammation: Now and the future”
- “Radiopharmaceuticals for therapy”

TERRI TUCKMAN, M.D.

May 13-16, 2003 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
- “Ultrasound of skeletal dysplasias: A simple approach”
PAMELA VAN TASSEL, M.D.

• “Neoplasia of the spinal cord and meninges”

RICHARD J. WECHSLER, M.D.

September 19-20, 2002 The Western Pennsylvania Hospital, Department of Radiology, Pittsburgh, PA
• “CT of abdominal pain”
• “CT of abdominal trauma”

ANNINA N. WILKES, M.D.

May 13-16, 2003 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Philadelphia, PA
• “Breast ultrasound: Normal and developmental anatomy – Scanning techniques”
• “Fetal echocardiography – Scanning techniques”

ADAM C. ZOGA, M.D.

• “MR arthrography of the shoulder: Introduction and normal variants”
• “Indirect MR arthrography of the upper extremity”

May 4-9, 2003 103rd Annual Meeting of the American Roentgen Ray Society, San Diego, CA
• “Lumbar degenerative endplate changes and association with body mass index”
• “MRI after total hip replacement”

• “Bone marrow edema patterns associated with altered biomechanics”

June 28-29, 2003 8th Annual Jefferson Lower Extremity Advanced Imaging Symposium, Philadelphia, PA
• “The posterolateral corner of the knee: What’s there and why should I care?”
HONORS, EDITORIAL ACTIVITIES, SERVICE TO REGIONAL OR NATIONAL ORGANIZATIONS
2002-2003

OKSANA H. BAL TAROWICH, M.D.

- Member, Executive Committee, Friends of Radiology in Ukraine
- Member, Advisory Editorial Board, Ukrainian Radiological Journal
- AMA Physician's Recognition Award in Continuing Medical Education

JOSEPH BONN, M.D.

- Vice Chairman, Cardiovascular and Interventional Radiology Research and Education Foundation (CIRREF), Society of Interventional Radiology
- Member, Standards of Practice Committee, Society of Interventional Radiology
- Member, University of Virginia Medical Alumni Board of Directors
- Editor, Abstracts of Current Literature, Journal of Vascular and Interventional Radiology
- Reviewer, Radiology
- Reviewer, Academic Radiology

W. SCOTT ENOCHS, M.D., PH.D.

- Reviewer, Radiology
- Reviewer, Journal of Magnetic Resonance Imaging

DAVID J. ESCHELMAN, M.D.

- Member, Relative Value Update Advisory Committee, Society of Cardiovascular and Interventional Radiology
- Member, Advisory Board, Journal of Vascular and Interventional Radiology
- Associate Editor, Radiology
- Member, Editorial Board, Journal of Vascular and Interventional Radiology
- Reviewer, Journal of Vascular and Interventional Radiology
- Reviewer, Radiology
- Examiner, Certificate of Added Qualifications in Vascular and Interventional Radiology Examination, American Board of Radiology

RICK I. FELD, M.D.

- Chairman, Intraoperative Interventional Section, American Institute of Ultrasound in Medicine
- Vice Chairman, Membership Committee, American Institute of Ultrasound in Medicine
- Member, Executive Board, Philadelphia Roentgen Ray Society
- Member, Ultrasound Section on Human Resources, American College of Radiology
- Member, Exam Development Task Force (Abdomen), American Registry of Diagnostic Medical Sonographers
• Advisory Editorial Board, Journal of Ultrasound in Medicine
• Reviewer, Journal of the American Medical Association
• Reviewer, American Journal of Roentgenology
• Reviewer, Clinical Imaging
• Reviewer, Journal of Clinical Ultrasound
• Reviewer, Journal of Ultrasound in Medicine
• Reviewer, Journal of Vascular and Interventional Radiology

ADAM E. FLANDERS, M.D.

• Consultant, Contrast Division, Squibb Diagnostics
• Consultant, Medical Policy, Independence Blue Cross
• Consultant, Medical Review, Independence Blue Cross
• Consultant, Neuroradiology, Neuron Therapeutics
• Guest Speaker, Squibb Diagnostics Speakers' Bureau
• Member, Electronic Communications Committee, Radiological Society of North America
• Member, Scientific Exhibits Award Committee (SEAC), Radiological Society of North America
• Member, Informatics Committee, American Society of Spine Radiology
• Reviewer, The New England Journal of Medicine
• Reviewer, American Journal of Neuroradiology
• Reviewer, Neuroradiology
• Reviewer, Radiographics
• Reviewer, The Radiological Society of North America Electronic Journal
• Abstract Reviewer, InfoRad, The Radiological Society of North America

FLEMMING FORSBERG, PH.D.

• Chair, Technical Standards Committee, American Institute of Ultrasound in Medicine
• Member, Board of Governors, American Institute of Ultrasound in Medicine
• Member, Advisory Editorial Board, Journal of Ultrasound in Medicine
• Member, Advisory Editorial Board, Ultrasound in Medicine and Biology
• Reviewer, Radiology
• Reviewer, IEEE Transactions on Ultrasonics, Ferroelectrics & Frequency Control
• Reviewer, Journal of Ultrasound in Medicine
• Reviewer, Circulation
• Reviewer, Ultrasound in Medicine and Biology
• Reviewer, AIUM Research & Education Foundation
• Dean's Award, “Comparing contrast-enhanced ultrasound to angiogenic markers from melanoma in a murine model” (poster), 5th Annual Research Day at Drexel University, Philadelphia, PA, April 2003

DAVID P. FRIEDMAN, M.D.

• Member, Education Committee, American Society of Neuroradiology
• Editorial Board, Current Problems in Diagnostic Radiology
• Reviewer, American Journal of Roentgenology
• Reviewer, Neurology
BARRY B. GOLDBERG, M.D.

- President, Radiology Outreach Foundation
- Chair, Committee on Ultrasound, American College of Radiology Imaging Network
- Chairman, Fiftieth Anniversary Committee, American Institute of Ultrasound in Medicine
- Member, Board of Directors, Breast Cancer and Women’s Health Ultrasound Foundation
- Member, Advisory Board, Radiology Outreach Foundation
- Member, Presidential Advisory Council, American Institute of Ultrasound in Medicine
- Member, Global Steering Group for Education and Training in Diagnostic Imaging, World Health Organization
- Member, Education Council, Radiological Society of North America
- Member, Education and Research Fund Committee, American Institute of Ultrasound in Medicine
- Member, Research and Education Foundation Program Committee, Radiological Society of North America
- Member, Committee on International Relations and Education (CIRE), Radiological Society of North America
- Member, Corporate Advisory Council, Radiological Society of North America
- Member, Public Information Advisory Board, Radiological Society of North America
- Member, Outstanding Researcher Award Review Panel, Research and Education Fund, Radiological Society of North America
- Member, Past Presidents Committee, American Institute of Ultrasound in Medicine
- Member, International Advisory Board, Turkish Journal of Diagnostic and Interventional Radiology
- Honorary Member, World Federation for Ultrasound in Medicine and Biology
- Member, Editorial Board Committee, Acta Clinica Croatica
- Editorial Board, Journal of Ultrasound in Medicine and Biology
- Editorial Board, Archives of Clinical Imaging
- Editorial Board, Ultrasound International Journal
- Editorial Board, Radiologia
- Editorial Board, Journal of Surgical Ultrasonology
- Editorial Advisory Board, West African Journal of Medicine
- Reviewer, The New England Journal of Medicine
- Reviewer, Cancer
- Reviewer, American Journal of Roentgenology
- Reviewer, Gastroenterology
- Reviewer, Journal of the National Cancer Institute
- Reviewer, Gastrointestinal Endoscopy
- Reviewer, Radiology
- Reviewer, Health Devices

CARIN F. GONSALVES, M.D.

- Reviewer, Journal of Vascular and Interventional Radiology
- Judith Dubbs Memorial Research Award, Department of Radiology, Thomas Jefferson University, 2003
- Scientific Program Award High Honors, Poster, “Infectious complications of implantable venous access devices in patients with sickle cell disease” (poster), 28th Annual Scientific Meeting of the Society of Cardiovascular and Interventional Radiology, Salt Lake City, UT, March 2003
ETHAN J. HALPERN, M.D.
- Associate Editor, Radiology
- Reviewer, American Journal of Roentgenology
- Reviewer, Ultrasound in Medicine and Biology
- Reviewer, Annals of Internal Medicine
- Member, Interventional Ultrasound Program Committee, American Institute of Ultrasound in Medicine

CHARLES M. INTENZO, M.D.
- Associate Editor, Radiology
- Reviewer, Journal of Nuclear Medicine
- Reviewer, Radiographics

DAVID KARASICK, M.D.
- Member, Closed Meeting Case Review Committee, International Skeletal Society
- Editor-in-Chief, Seminars in Musculoskeletal Radiology
- Reviewer, American Journal of Roentgenology
- Reviewer, Radiology
- Reviewer, Skeletal Radiology

SUNG M. KIM, M.D.
- Member, Executive Council, Program Development Education Funding, Society of Nuclear Medicine
- Member, Brain Imaging Council, Society of Nuclear Medicine
- Member, Computer and Instrumentation Council, Society of Nuclear Medicine
- Member, Correlative Imaging Council, Society of Nuclear Medicine
- Reviewer, Journal of Nuclear Medicine

ALFRED B. KURTZ, M.D.
- President, American Institute of Ultrasound in Medicine
- Member, Finance Committee, American Institute of Ultrasound in Medicine
- Co-Opt Councilor, World Federation of Ultrasound for Medicine and Biology
- Associate Editor, Ultrasonography, Radiology
- Member, Manuscript Review Panel, American Journal of Roentgenology
- Special Reviewer, Gynecologic Oncology
- Special Reviewer, Ultrasound in Medicine and Biology
- Reviewer, Radiographics

ANNA S. LEV-TOAFF, M.D.
- Editorial Board, Journal of Ultrasound in Medicine
- Reviewer, American Journal of Roentgenology
• Reviewer, *Journal of Ultrasound in Medicine*
• Reviewer, *Radiology*
• Reviewer, *Ultrasound in Obstetrics and Gynecology*

**Ji-Bin Liu, M.D.**

• Member, Medical Advisory Board, International Certification and Education Accreditation Foundation
• Editorial Board, *Chinese Journal of Medical Imaging Technology*
• Editorial Board, *Journal of Ultrasound in Clinical Medicine*
• Reviewer, *Journal of Ultrasound in Medicine*
• Reviewer, *Ultrasound in Medicine and Biology*

**Christopher R.B. Merritt, M.D.**

• President-Elect, American Roentgen Ray Society
• Vice-President, American Roentgen Ray Society
• Vice President, American College of Radiology
• Treasurer, World Federation of Ultrasound in Medicine and Biology
• Acting Director, Informatics, American Board of Radiology
• Trustee, American Board of Radiology
• Category Chair, Ultrasound, American Board of Radiology
• Chair, Editorial Search Committee, *American Journal of Roentgenology*
• Contributing Editor, *Breast Diseases Quarterly*
• Consulting Editor, *Ultrasound Quarterly*
• Reviewer, *Radiology*
• Reviewer, *Academic Radiology*
• Reviewer, *American Journal of Roentgenology*
• Reviewer, *Ultrasound in Medicine and Biology*
• Francis H. William Lecturer, Boston University Medical Center, June 2003

**Donald G. Mitchell, M.D.**

• Member, Ad Hoc Expert Panel for Estimating Physician Work Relative Values for Magnetic Resonance Imaging, American College of Radiology
• Member, Committee on Research and Technology, Commission on Neuroradiology & Magnetic Resonance, American College of Radiology
• Member, Education Committee, International Society for Magnetic Resonance in Medicine
• Member, Membership Committee, Society of Computed Body Tomography and Magnetic Resonance
• Associate Editor, *Journal of Magnetic Resonance Imaging*
• Editorial Board, *Abdominal Imaging*
• Editorial Board, *Journal of Computer Assisted Tomography*
• Reviewer, *Radiology*
• Reviewer, *American Journal of Roentgenology*
• Reviewer, *Academic Radiology*
• Reviewer, *Radiographics*
WILLIAM B. MORRISON, M.D.

- Member, Program Committee, Society of Skeletal Radiology
- Chairman, Musculoskeletal Study Group, The 11th Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine
- Member, Study Group Planning Committee, The 11th Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine
- Editorial Board, Seminars in Musculoskeletal Radiology
- Abstract Reviewer, The 11th Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine
- Reviewer, Radiology
- Reviewer, American Journal of Roentgenology
- Editor’s Recognition Award for Distinction in Reviewing, Radiology

LEVON N. NAZARIAN, M.D.

- Chair, Musculoskeletal Ultrasound Section, American Institute of Ultrasound in Medicine
- Chair, Committee on Research & Technology Assessment, Commission on Ultrasound, American College of Radiology
- Liaison, American Registry of Radiologic Technologists Vascular Sonography Exam Committee, Commission of Human Resources, American College of Radiology
- Member, Educational Evaluation Committee, American Roentgen Ray Society
- Member, Council on Sections, American Institute of Ultrasound in Medicine
- Member, Regional Course Committee, American Institute of Ultrasound in Medicine
- Member, Annual Convention Committee, American Institute of Ultrasound in Medicine
- Member, Public Information Advisors Network, Radiological Society of North America
- Member, Publication Committee and Editorial Policy Subcommittee, American Roentgen Ray Society
- Member, Editorial Search Committee, American Journal of Roentgenology
- Medical Adviser, Public Web Site, Radiological Society of North America – American College of Radiology
- Advisory Editorial Board, Journal of Ultrasound in Medicine
- Reviewer, Radiology
- Reviewer, American Journal of Roentgenology
- Reviewer, Journal of Ultrasound in Medicine
- Participant, Kodak-AUR Introduction to Management Program, Association of University Radiologists (sponsored by Eastman Kodak)
- Editor’s Recognition Award for Distinction in Reviewing, Radiology
- Dean’s Award, “Comparing contrast-enhanced ultrasound to angiogenic markers from melanoma in a murine model” (poster), 5th Annual Research Day at Drexel University, Philadelphia, PA, April 2003
- Mentor, James Traiforos, M.D., Winner, RSNA Resident Research Trainee Prize (for) “Ultrasound-guided debridement and corticosteroid injection for musculoskeletal injuries refractory to conservative management”
LAURENCE NEEDLEMAN, M.D.

- Chair, Corporate Affairs Committee, Society of Radiologists in Ultrasound
- Chair, Technologist Advisory Committee, Philadelphia Roentgen Ray Society
- Assistant Chair, Regional Course Committee, American Institute of Ultrasound in Medicine
- Member, Commission on Standards (Commission on Ultrasound), American College of Radiology
- Member, Clinical Standards Committee, American Institute of Ultrasound in Medicine
- Member, Committee on Ultrasonography, Pennsylvania Radiological Society
- Member, Committee on Bylaws, Philadelphia Roentgen Ray Society
- Editorial Board, *Journal of Ultrasound in Medicine*
- Reviewer, *Journal of Ultrasound in Medicine*

PATRICK L. O'KANE, M.D.

- President-Elect, Greater Delaware Valley Ultrasound Society
- Advisor, Clinical Issues, NIH Trinational Chernobyl Project

CATHERINE W. PICCOLI, M.D.

- Member, Committee on Standards and Accreditation, Commission on Ultrasound, American College of Radiology
- Member, Clinical Image Reviewer Subcommittee, Mammography Accreditation Program, American College of Radiology
- Member, Committee on Mammography, The Pennsylvania Radiological Society
- Reviewer, *Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Ultrasound in Medicine and Biology*

VIJAY M. RAO, M.D.

- President, Association of Program Directors in Radiology
- Vice President, American Society of Head and Neck Radiology
- Secretary, American Society of Head and Neck Radiology
- Chair, Program Committee, Research and Education Foundation, Radiological Society of North America
- Fellow, Executive Leadership in Academic Medicine (ELAM)
- Member, Board of Directors, Association of Program Directors in Radiology
- Member, Executive Committee, American Society of Head and Neck Radiology
- Member, Academic Council, Consortium of Society of Chairmen in Academic Radiology Departments/Association of Program Directors in Radiology/Association of University Radiologists/Radiological Society of North America
- Member, Research Committee, American Society of Neuroradiology
- Member, Committee on Government Issues, Association of Program Directors in Radiology
- Member, Scientific Program Committee, Radiological Society of North America
- Member, Scientific Program Committee, Association of Program Directors in Radiology
- Keynote Speaker, Graduation Ceremonies, Department of Diagnostic Imaging, Jefferson College of Health Professions, Thomas Jefferson University, Philadelphia, PA, June 2003
- Consultant, Educational Retreat, Case Western Reserve University, Cleveland, Ohio
- Member, Editorial Executive Committee, Academic Radiology
- Reviewer, Scientific Exhibits, Radiological Society of North America, Radiographics
- Reviewer, Scientific Abstracts, 88th Scientific Assembly and Annual Meeting of the Radiological Society of North America
- Reviewer, Scientific Abstracts, Association of University Radiologists 51st Annual Meeting
- Reviewer, Scientific Abstracts, American Society of Head and Neck Radiology 36th Annual Meeting
- Reviewer, Scientific Abstracts, 41st Annual Meeting of the American Society of Neuroradiology
- Reviewer, Radiology
- Reviewer, American Journal of Neuroradiology
- Reviewer, Neuroradiology
- Reviewer, Academic Radiology
- Reviewer, Radiographics
- Editor's Certificate of Recognition for Review of Manuscripts, Radiographics
- Editors Certificate of Recognition for Review of Scientific Exhibits, Radiographics

MARK E. SCHWEITZER, M.D.

- President's Medal, International Skeletal Society
- Distinguished Scientific Advisor, Research and Education Fund, Radiological Society of North America
- Presiding Officer, International Society of Magnetic Resonance in Medicine
- Presiding Officer, International Skeletal Society (open meeting)
- Presiding Officer, American Roentgen Ray Society
- Presiding Officer, Radiological Society of North America
- Member, Musculoskeletal Review Committee, American College of Radiology
- Member, Committee on Research and Technology, Commission on Body MRI, American College of Radiology
- Member, San Francisco Committee, International Skeletal Society
- Member, Liaison Committee, International Skeletal Society
- Examiner, Musculoskeletal Section, American Board of Radiology
- Member, Auditing Committee, International Skeletal Society
- Member, Scientific Program Committee, International Society for Magnetic Resonance in Medicine
- Member, Membership Committee, International Skeletal Society
- Guest Expert, Arthritis Advisory Committee, Center for Drug Evaluation, Food and Drug Administration
- Co-Editor-in-Chief, Seminars in Musculoskeletal Imaging
- Editorial Board, Skeletal Radiology
- Abstract Reviewer, The 11th Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine
- Reviewer, Radiology
- Reviewer, American Journal of Roentgenology
- Reviewer, Annals of Internal Medicine
- Reviewer, Journal of Clinical Ultrasound
- Reviewer, Journal of Computed Assisted Tomography
- Reviewer, Journal of Clinical Rheumatology
- Reviewer, Journal of Magnetic Resonance Imaging
- Reviewer, Academic Radiology

Page 73
• Reviewer, *Arthritis and Rheumatism*
• Reviewer, *Skeletal Radiology*
• Reviewer, *Radiographics*

**SHARON SEGAL, M.D.**

• Member, Continuing Medical Education Committee, American Osteopathic College of Radiology

**ROSITA M. SHAH, M.D.**

• Section editor, Pulmonary Infections, ACR Chest Teaching File
• Reviewer, *American Journal of Roentgen Ray Society*
• Reviewer, *Radiology*
• Reviewer, *Radiographics*

**KEVIN L. SULLIVAN, M.D.**

• Member, Research Committee, Society of Cardiovascular and Interventional Radiology
• Editorial Consultant, *Journal of Vascular and Interventional Radiology*
• Reviewer, *Journal of Vascular and Interventional Radiology*
• Reviewer, *Radiology*

**LISA M. TARTAGLINO, M.D.**

• Reviewer, *Radiology*

**MATHEW L. THAKUR, PH.D.**

• Vice-President, Society of Nuclear Medicine
• Delegate-at-Large, Society of Nuclear Medicine
• Chair, Young Investigators Award Committee, International Society of Radiolabeled Blood Elements
• Chair, Lifetime Achievement Award Committee, Indo-American Society of Nuclear Medicine
• Chair, 50th Anniversary Committee, Society of Nuclear Medicine
• Member, Board of Governors, Greater New York Chapter, The Society of Nuclear Medicine
• Member, Advisory Committee, US Pharmacopea
• Member, Advisory Committee, Kuwait Medical Research Council
• Member, Advisory Committee, International Atomic Energy Agency
• Member, Advisory Committee, Lawrence Berkeley National Laboratory
• Member, Site Visit Committee, National Institutes of Health
• Member, Scientific Program Committee, World Federation of Nuclear Medicine and Biology
• Member, Scientific Program Committee, Annual Post-Congress of the European Association of Nuclear Medicine
• Member, International Science Committee, International Society of Radiolabeled Blood Elements
• Ad hoc member, Grant Review Service, National Institutes of Health
• Member, Grant Review Service, Canadian Medical Research Council
• Member, Grant Review Service, Foundation for Medical Research, Vienna, Austria
• Member, Best Abstract Award Committee, Indo-American Society of Nuclear Medicine
• Session Chair, Post-Congress, Annual Meeting of the European Association of Nuclear Medicine
• Session Chair, Brazilian Society of Nuclear Medicine
• Session Chair, World Federation of Nuclear Medicine and Biology
• Session Chair, Continuing Medical Education, World Federation of Nuclear Medicine and Biology
• Session Chair, Annual Meeting of the International Society of Radiolabeled Blood Elements
• Round Table Coordinator, International Society of Radiolabeled Blood Elements Post-Congress
• Organizer, Continuing Medication Education, World Federation of Nuclear Medicine and Biology
• Editorial Board, *European Journal of Nuclear Medicine*
• Editorial Board, *Journal of the Indian Association of Clinical Medicine*
• Editorial Board, *Journal of Labelled Compounds and Radiopharmaceuticals*
• Editorial Board, *Journal of Nuclear Medicine*
• Editorial Board, *Journal of Nuclear Medicine and Biology*
• Editorial Board, *Nuclear Medicine Communications*
• Editorial Board, *Journal of the Association of Latin American Societies of Nuclear Medicine and Biology*
• Editorial Board, *Spanish Journal of Nuclear Medicine*
• Reviewer, *European Journal of Nuclear Medicine*
• Reviewer, *Journal of Labelled Compounds and Radiopharmaceuticals*
• Reviewer, *Journal of Nuclear Medicine*
• Reviewer, *Journal of Nuclear Medicine and Biology*
• Reviewer, *Nuclear Medicine Communications*

**TERRI TUCKMAN, M.D.**

• Speaker of the House of Delegates, Board of Directors of the American Medical Women's Association
• Chair, Professional Development Committee, American Medical Women's Association
• Member, Career Development Task Force, American Medical Women's Association
• Member, Committee on Gender Equity, American Medical Women's Association

**RICHARD J. WECHSLER, M.D.**

• Councilor, American College of Radiology
• Reviewer, *Radiology*
• Member, Bylaws Committee, Philadelphia Roentgen Ray Society
• Member, Annual Oration Committee, Philadelphia Roentgen Ray Society
• Member, Board of Censors, Philadelphia Roentgen Ray Society
• Member, Committee on Councilors and College Affairs, Pennsylvania Radiological Society
• Member, Committee on Legislative Affairs, Pennsylvania Radiological Society
ANNINA N. WILKES, M.D.

• State Director, American Women's Association
• Member, Women's Health Committee, American Medical Women's Association
• Member, Medical Advisory Board, Linda Creed Breast Cancer Foundation
• Member, Advisory Board Women's Health Source, Thomas Jefferson University Hospital
• International Visiting Professor, Radiologic Society of North America

JEAN K. YI, M.D.

• Reviewer, Kluwer Academic Publishers
APPENDIX

Table 1  ACTIVE GRANTS
Table 2  PENDING GRANTS
### TABLE 1

**NIH/OTHER FEDERAL GRANTS**

<table>
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<tr>
<th>PRINCIPAL INVESTIGATOR</th>
<th>TITLE OF PROJECT</th>
<th>FUNDING SOURCE</th>
<th>FUNDING DATES</th>
<th>DIRECT COSTS</th>
<th>INDIRECT COSTS</th>
<th>TOTAL COSTS FUNDED</th>
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<td>Forsberg, F. C10101</td>
<td>Nanotechnology Delivery Team: Targeted Delivery of Biomolecules</td>
<td>Ben Franklin Technology Center of Southeastern Pennsylvania</td>
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<td>Estimation of Tumor Angiogenesis with Contrast Enhanced Subharmonic Ultrasound Imaging</td>
<td>U.S. Army Medical Research Acq. DAMD17-00-1-0464</td>
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<td>Multi-Pulse Ultrasound Contrast Imaging for Improved Breast Cancer Diagnosis</td>
<td>U.S. Army Medical Research Acq. DAMD17-00-1-0662</td>
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<td>Ultrasound Activated Contrast Imaging for Prostate Cancer Detection</td>
<td>U.S. Army Medical Research Acq. DAMD17-03-1-0119</td>
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<td>System for Excitation-Enhanced Ultrasound Contrast Imaging</td>
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<td>2 and 3D Imaging of Contrast Agents in Animal Models</td>
<td>NIH thru Medical Diagnostic Research Foundation R01 CA72895-05A1</td>
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<td>Developing of Tissue Characterization Methods</td>
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<td>American College of Radiology Cooperative Group Mechanism of the ACR Imaging Network</td>
<td>NIH thru ACRIN (cooperative group)</td>
<td>01/01/02 - 12/31/03</td>
<td>$8,000</td>
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<td>Development of a New Class of Ultrasound Contrast Agents</td>
<td>NIH thru Drexel 2 RO1 HL52901-05A1</td>
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<td>Intermittent Ultrasound Imaging of Prostate Cancer</td>
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<td>In Situ, High Speed Scanning Acoustic Microscope</td>
<td>NIH (SBIR) thru Creare, Inc. 2R44 CA74663-02A1</td>
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<td>3D Digital Imaging of Breast Calcifications: Improvements in Image Quality and Development</td>
<td>U.S. Army Medical Research Acq. DAMD17-97-1-7143</td>
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<td>A Novel Method for Determining Calcification Composition</td>
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<td>X-Ray Polarization Imaging</td>
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<td>Role of Radiology in the Pretreatment Evaluation of Invasive Cervical Cancer</td>
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<td>Quantification of the Benefits of Pendant Mammography</td>
<td>U.S. Army Medical Research Acq.</td>
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<td>High Frequency Two-Dimensional Ultrasonic Transducers</td>
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<td>11/15/98 - 08/31/02 18 month no cost extension</td>
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<td>MRI Evaluation of the Contralateral Breast in Women with a Recent Diagnosis of Breast Cancer</td>
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<td>Imaging Thromboembolism with Fibrin Avid Tc-99m-Peptide</td>
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<td>A Phase I/II Study of Percutaneous Radiofrequency Ablation of Bone Metastases Using CT Guidance</td>
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<td>Core Curriculum Project for the Ultrasound Affiliate Training Centers in Eastern Europe and the Soviet Union</td>
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<td>01/14/98 - 12/31/02, no cost extension</td>
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<td>Radiologic Society of North America</td>
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<td>Lev-Toaff, A. A68401</td>
<td>Two- and Three-Dimensional Ultrasound versus Same of Next-Day Biopsy Obtained at Office Hysteroscopy in the Evaluation of Women with Postmenopausal Bleeding</td>
<td>Society of Radiologists in Ultrasound</td>
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<td>Breast Health Institute</td>
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<td>Contrast Enhanced Ultrasound Monitoring of Angiogenesis in Human Melanoma Xenograft</td>
<td>Radiologic Society of North America</td>
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**Active Grants**

07/01/02 - 06/30/03

(Report reflects entire award period and current fiscal year of award)

## INDUSTRIAL GRANTS

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<th>FUNDING DATES</th>
<th>DIRECT COSTS</th>
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<td>Feld, R. D53901</td>
<td>The Prevention of Deep Vein Thrombosis in Acute Spinal Cord Injury Comparing Enoxaparin vs Low Dose Heparin Plus External Pneumatic Compression During the First Two Weeks Followed by Enoxaparin vs Low Dose Heparin in the Remaining Six Weeks</td>
<td>Rhone-Poulenc Rorer</td>
<td>03/01/95 - 12/31/02</td>
<td>$72,960</td>
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<td>Flanders, A. A53601</td>
<td>Optimized Harmonic Imaging with Contrast (Loqiq 700)</td>
<td>GliaTech</td>
<td>09/01/01 - 12/31/50</td>
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<td>Evaluation of VueSonix Volume Flow Measurements</td>
<td>VueSonix</td>
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<td>$36,839</td>
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<td>Contrast Enhanced Prostate Imaging Additional Staining</td>
<td>Alliance Pharmaceuticals</td>
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<td>Goldberg, B. A55101</td>
<td>Ultrasound Contrast Imaging of Lymph Nodes with Metastatic Melanoma</td>
<td>Amersham Health</td>
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<td>Goldberg, B. A63001</td>
<td>Contrast Enhanced Ultrasound Imaging of Sentinel Lymph Nodes and Lymphatic Channels (Lymphosonography) in Swine with Melanoma Tumors</td>
<td>Amersham Health</td>
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<td>Contrast-Enhanced Prostate Imaging - System Optimization</td>
<td>Alliance Pharmaceuticals</td>
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<td>A66701</td>
<td>Impact of Dutasteride on Doppler Imaging Characteristics of the Prostate</td>
<td>GlaxoSmithKline</td>
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<td>H60801</td>
<td>A Phase III Open Label Multicenter Trial to Compare the Diagnostic Accuracy of Definity®-Enhanced Ultrasound Imaging versus Contrast-Enhanced Computed Tomography (CT) for Characterizing Liver Lesions</td>
<td>Bristol-Myers Squibb</td>
<td>10/18/02</td>
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<td>A Multicenter, Open Label Trial to Evaluate the Efficacy and Safety of 90Y-ibritumomab rituxetan (IDEC-Y2B8 Zevalin™) Radioimmunotherapy of Relapsed or Refractory Low-Grade or Follicular Transformed B-Cell Non-Hodgkin's Lymphoma</td>
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<td>A Phase 3, Multicenter Study to Determine the Safety and Efficacy of MS-325 Enhanced MRA in Patients with Known or Suspected Renal Artery Disease</td>
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<td>Accuracy of Contrast-Enhanced Sonography for Detection of Traumatic Injuries to Solid Abdominal Organs Compared with Conventional (Non-Contrast) Sonography and Computed Tomography</td>
<td>Bristol-Myers Squibb</td>
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## Pending Grants
07/01/02 - 06/30/03
(Report reflects entire award period and first year of award)

### NIH/OTHER FEDERAL GRANTS

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<td>Cardiovascular Outcomes in Renal Atherosclerotic Lesions</td>
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<td>Contrast-Enhanced Ultrasound for Monitoring Radiofrequency Ablation of Prostate Cancer</td>
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## Pending Grants
07/01/02 - 06/30/03
(Report reflects entire award period and first year of award)

### FOUNDATION/NON-PROFIT ORGANIZATION GRANTS

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TOTAL PENDING FUNDING $5,729,523 $2,688,675 $8,418,198
TOTAL FIRST YEAR PENDING FUNDING $2,216,060 $831,421 $3,047,481