

6-30-2009

## Department of Radiology-Annual Executive Summary Report-July 1, 2008 to June 30, 2009

Vijay M. Rao, MD

Thomas Jefferson University, [Vijay.Rao@jefferson.edu](mailto:Vijay.Rao@jefferson.edu)

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**Department of Radiology**

# **Annual Executive Summary Report**

**July 1, 2008 to June 30, 2009**

**Vijay M. Rao, MD**  
**The David C. Levin Professor and Chair**



*Portrait Presentation June 3, 2009*

*Vijay M. Rao, M.D.*

*David C. Levin Professor and Chair*

*Department of Radiology, 2002 -*

*First Woman Chair of a Clinical Department*

*Jefferson Medical College*





## DEPARTMENT OF RADIOLOGY

Jefferson Medical College  
Thomas Jefferson University  
Jefferson University Hospitals



The Mission of the Department of Radiology  
is to provide quality diagnostic and  
therapeutic imaging services 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 and be the leader
- Operate in an efficient, productive, and cost effective manner
- Maintain excellence of our educational programs
- Continue to advance the science of translational and clinical imaging research



## **TABLE OF CONTENTS**

Department of Radiology	
Chairman, Vice Chairmen .....	1
Divisions and Directors .....	1
Committees and Chairmen .....	1
Radiology Department Faculty Rank .....	2
Faculty with Secondary Appointments .....	3
Clinical Divisions .....	4
Radiology Residents and Fellows .....	5
Department Organizational Chart .....	6
Department Administration Chart .....	7
State of the Department .....	8
Appendix I: Publications	
Journal Articles .....	21
Books and Book Chapters .....	29
Abstracts .....	30
Appendix II: Formal Scientific Presentations .....	40
Appendix III: Honors, Editorial Activities, Service to Regional or National Organizations .....	61
Appendix IV: Active Grants .....	74
Appendix V: Pending Grants .....	80

## **DEPARTMENT OF RADIOLOGY**

**Vijay M. Rao, M.D.**  
**Professor and Chairman**

Geoffrey A. Gardiner, Jr., M.D.	Vice Chair for Clinical Practice
Barry B. Goldberg, M.D.	Vice Chair for Strategic Planning
Ethan J. Halpern, M.D.	Vice Chair for Research
Christopher R.B. Merritt, M.D.	Vice Chair for Performance Improvement
Levon N. Nazarian, M.D.	Vice Chair for Education

**2008-2009**

### **DEPARTMENT CLINICAL DIVISIONS AND DIRECTORS**

BODY COMPUTED TOMOGRAPHY/ABDOMINAL IMAGING	Laurence Needleman, M.D.
BREAST IMAGING	Barbara C. Cavanaugh, M.D.
CARDIOTHORACIC RADIOLOGY	Narainder Gupta, M.D.
CARDIOVASCULAR/INTERVENTIONAL RADIOLOGY	Daniel B. Brown, M.D.
MAGNETIC RESONANCE IMAGING	Donald G. Mitchell, M.D.
MUSCULOSKELETAL AND GENERAL DIAGNOSTIC RADIOLOGY	William B. Morrison, M.D.
NEURORADIOLOGY/HEAD AND NECK RADIOLOGY	Adam E. Flanders, M.D. David P. Friedman, M.D.
NUCLEAR MEDICINE	Charles M. Intenzo, M.D.
ULTRASOUND	Barry B. Goldberg, M.D.
METHODIST HOSPITAL DIVISION	Larry A. Caputo, M.D.

### **DEPARTMENTAL COMMITTEES AND CHAIRMEN**

ADVISORY COMMITTEE	Alfred B. Kurtz, M.D.
CONTRAST COMMITTEE	Laurence Needleman, M.D.
EDUCATION COMMITTEE	Levon N. Nazarian, M.D.
INFORMATICS COMMITTEE	Adam E. Flanders, M.D.
PERFORMANCE IMPROVEMENT COMMITTEE	Christopher R.B. Merritt, M.D.
SCIENTIFIC ADVISORY FOR IMAGING RESEARCH	Barry B. Goldberg, M.D. Ethan J. Halpern, M.D.
RESIDENCY SELECTION COMMITTEE	Levon N. Nazarian, M.D.

**RADIOLOGY DEPARTMENT FACULTY RANK  
2008-2009**

**PROFESSORS**

Daniel Brown, M.D.  
Rick I. Feld, M.D.  
Adam E. Flanders, M.D.  
Flemming Forsberg, Ph.D.  
Geoffrey A. Gardiner, Jr., M.D.  
Barry B. Goldberg, M.D.  
Ethan J. Halpern, M.D., M.S.C.E.  
Charles M. Intenzo, M.D.  
David Karasick, M.D.  
Stephen Karasick, M.D.  
Alfred B. Kurtz, M.D.  
Christopher R.B. Merritt, M.D.  
Donald G. Mitchell, M.D.  
William B. Morrison, M.D.  
Levon N. Nazarian, M.D.  
Vijay M. Rao, M.D.  
Mathew L. Thakur, Ph.D.

**RESEARCH PROFESSOR**

Ji-Bin Liu, M.D.

**EMERITUS PROFESSOR**

David C. Levin, M.D.

**ASSOCIATE PROFESSORS**

Oksana H. Baltarowich, M.D.  
David J. Eschelman, M.D.  
David P. Friedman, M.D.  
Carin F. Gonsalves, M.D.  
Sung M. Kim, M.D.  
Song Lai, Ph.D.  
Laurence Needleman, M.D.  
Patrick O'Kane, M.D.  
Lisa M. Tartaglino, M.D.

**CLINICAL ASSOCIATE  
PROFESSOR**

Barbara C. Cavanuagh, M.D.

**ASSISTANT PROFESSORS**

Diane Deely, M.D.  
Steven G. Finden, D.D.S., M.D.  
Angela G. Gopez, M.D.  
Richard J. Gorniak, M.D.  
Melissa D. Kang, M.D.  
Jeffrey W. McCann, M.D.  
Christopher G. Roth, M.D.  
Sharon R. Segal, D.O.  
Dinesh K. Sharma, M.D.  
Annina N. Wilkes, M.D.  
Adam C. Zoga, M.D.

**CLINICAL ASSISTANT  
PROFESSORS**

Sandeep Deshmukh, M.D.  
Flavius Guglielmo, M.D.  
Elizabeth H. Hsu, M.D.  
Cindy Isaacson-Finden, M.D.  
Sorcha M. McNally, M.D.  
Terri Tuckman, M.D.

**RESEARCH ASSISTANT  
PROFESSOR**

Eric Gingold, Ph.D.  
Laurence Parker, Ph.D.  
Shaoxiong Zhang, M.D., Ph.D.

**INSTRUCTORS**

Susan DeWyngaert, M.D.  
Achala Donuru, M.D.  
Manoharan Muthuvelu, M.D.  
Michael J. Wolf, M.D.

## **FACULTY WITH SECONDARY APPOINTMENTS IN RADIOLOGY**

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

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

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

Christopher L. Hansen, M.D., Professor of Medicine [primary]  
Professor of Radiology [secondary]

Robert H. Rosenwasser, M.D., Professor of Neurosurgery [primary]  
Professor of Radiology [secondary]

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

Joseph A. Tracy, Ph.D., Assistant Professor of Neurology [primary]  
Associate Professor of Radiology [secondary]

Paul Walinsky, M.D., Professor of Medicine [primary]  
Assistant Professor of Radiology [secondary]



## **DEPARTMENT OF RADIOLOGY**

Vijay M. Rao, M.D., Chairman

### **CLINICAL DIVISIONS 2008-2009**

#### **Body Computed Tomography/ Abdominal Imaging**

**Directed by Laurence Needleman, M.D.**  
Drs. Oksana Baltarowich, Rick Feld, Cindy Finden, Flavius Guglielmo, Ethan Halpern, Stephen Karasick, Alfred Kurtz, Levon Nazarian, Patrick O'Kane

#### **Breast Imaging**

**Directed by Barbara C. Cavanuagh, M.D.**  
Drs. Susan DeWyngaert, Cindy Finden, Elizabeth Hsu, Sorch McNally, Annina Wilkes

#### **Cardiothoracic Radiology**

**Directed by Narainder Gupta, M.D.**  
Drs. Achala Donuru, Cindy Finden, Ethan Halpern, David Karasick, Stephen Karasick, Manoharan Muthuvelu, Dinesh Sharma

#### **Cardiovascular/ Interventional Radiology**

**Directed by Daniel B. Brown, M.D.**  
Drs. David Eschelman, Geoffrey Gardiner, Jr., Carin Gonsalves, Jeffrey McCann

#### **Magnetic Resonance Imaging**

**Directed by Donald G. Mitchell, M.D.**  
Drs. Diane Deely, Angela Gopez, Flavius Guglielmo, William Morrison, Patrick O'Kane, Christopher Roth, Adam Zoga

#### **Musculoskeletal and General Diagnostic Radiology**

**Directed by William B. Morrison, M.D.**  
Drs. Diane Deely, Cindy Finden, Angela Gopez, David Karasick, Stephen Karasick, Christopher Roth, Adam Zoga

#### **Neuroradiology/ENT Radiology**

**Directed by Adam Flanders, M.D.,  
David Friedman, M.D.**  
Drs. Sandeep Deshmukh, Steven Finden, Richard Gorniak, Melissa Kang, Vijay Rao, Dinesh Sharma, Lisa Tartaglino, Michael Wolf

#### **Nuclear Medicine**

**Directed by Charles M. Intenzo, M.D.**  
Drs. Sung Kim

#### **Ultrasound**

**Directed by Barry B. Goldberg, M.D.**  
Drs. Oksana Baltarowich, Rick Feld, Flavius Guglielmo, Ethan Halpern, Alfred Kurtz, Christopher Merritt, Donald Mitchell, Levon Nazarian, Laurence Needleman, Patrick O'Kane, Sharon Segal, Terri Tuckman, Annina Wilkes

#### **Research**

Drs. Flemming Forsberg, Eric Gingold, Song Lai, Ji-Bin Liu, Laurence Parker, Mathew Thakur, Shaoxiong Zhang

**DEPARTMENT OF RADIOLOGY**  
**HOUSESTAFF ROSTER**  
2008-2009

**RESIDENTS**

**FIRST YEAR RESIDENTS**

Robert D. Adamo, M.D.  
Courtney Hoey, M.D.  
Waseem Khalid Khan, M.D.  
Jessica H. Kobil, M.D.  
Michael Petroziello, M.D.  
Ariel D. Prager, M.D.  
Michael T. Scanlan, M.D.  
James M. Terzian, M.D.  
Ronald S. Winokur, M.D.

**THIRD YEAR RESIDENTS**

Adeel Hasan Azam, M.D.  
Sara E. Brooks-Sienkiewicz, M.D.  
Susan Cha, M.D.  
Michael J. Gold, M.D.  
Jennifer Hubert, M.D.  
Elizabeth P. Ives, M.D.  
Njogu J. Njuguna, M.D.  
Marzban Rad, M.D.  
Paul J. Read, M.D.

**SECOND YEAR RESIDENTS**

Anton G. Delpont, M.D.  
Phyllis K. Dioguardi, M.D.  
Nancy N. Kang, M.D.  
Jonathan Lieberman, M.D.  
Jeffrey J. Mathews, M.D.  
Hema S. Nallamshetty, M.D.  
Piotr Sadej, M.D.  
Michelle G. Sterling, M.D.  
Niti Tank, M.D.

**FOURTH YEAR RESIDENTS**

Amy F. Austin, M.D.  
Luis Beltran, M.D.  
Suzanne S. Long, M.D.  
Kristen E. McClure, M.D.  
Ami Modi, M.D.  
Nirav Patel, M.D.  
Tamara Ann Trella, M.D.  
Chun Wang, M.D.

**Nuclear Medicine**

Ronald B. Goodwich, M.D. (thru 07/08)  
Medina C. Kushen, M.D.  
Urmi Sen, M.D.

**FELLOWS**

**ABDOMINAL IMAGING**

Cyrillo R. Araujo, M.D.  
Gregory M. Grimaldi, M.D.  
David A. Kenny, D.O.  
Tony Tachung Lee, M.D.  
Seamus Looby, M.D.  
Darian M. Pajak, M.D.  
Jeffrey P. Vargo, M.D.

**BODY MRI**

Roberta Yang, M.D.

**BREAST IMAGING**

Neeta Mody Vargo, M.D.

**CARDIOTHORACIC IMAGING**

Achala Donuru, M.D. (thru 12/08)

**CARDIOVASCULAR/INTERVENTIONAL**

S. Yedida Goldman, M.D.  
Krishna Iyer, M.D.

**MUSCULOSKELETAL**

George Paul Hobbs, M.D.  
Jeffrey Leichter, M.D.  
Ketan Naran, M.D.

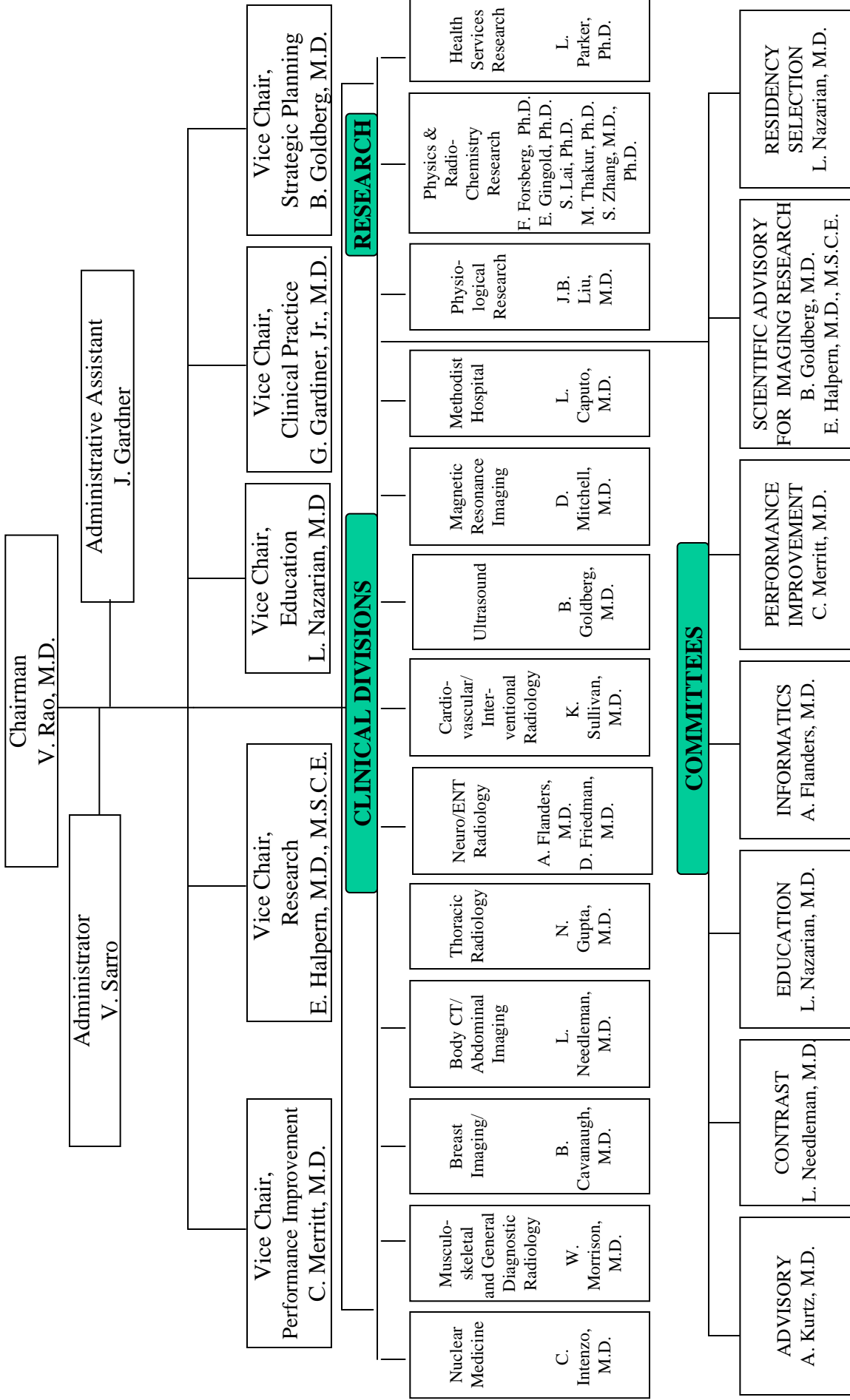
**MUSCULOSKELETAL/NEURO MRI**

Nitesh Bhagat, M.D.  
Sudhir Vora, M.D.  
Peter Wahba, M.D.

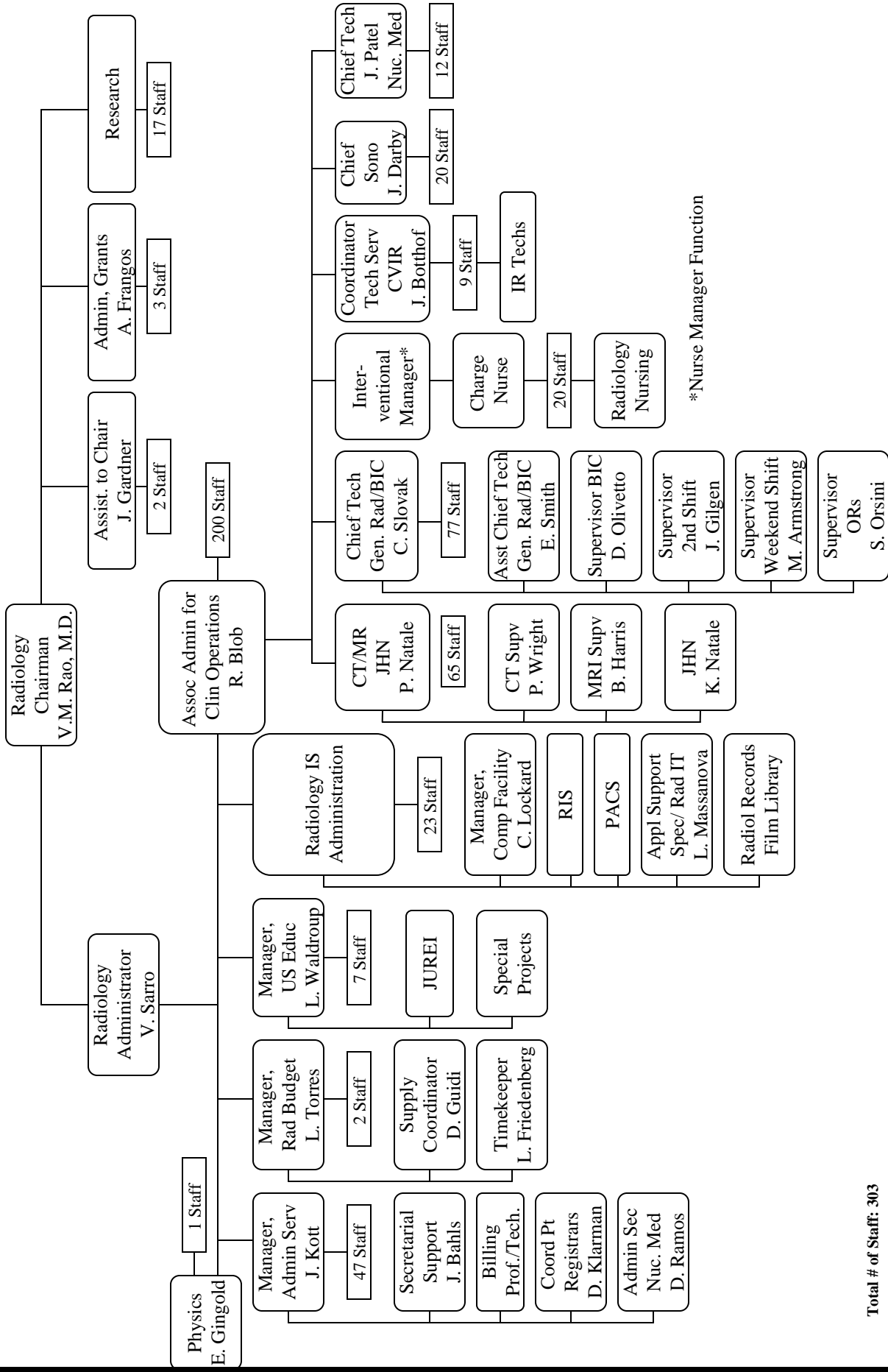
**NEURO/ENT**

Garen Boghosian, M.D.  
Ryan Crawford, M.D.  
Rashi I. Mehta, M.D.  
Neeta Rao, M.D.

Department of Radiology (2008-2009)



# Department of Radiology Administration



Total # of Staff: 303

**STATE OF THE DEPARTMENT**  
**2008-2009**  
**Chairman's Report**  
**Vijay M. Rao, M.D., F.A.C.R.**

I am pleased to report that we have had a very strong year despite the many challenges facing health care providers, not the least of which is the severe ongoing recession. It is gratifying to reflect on the successes of our department in balancing its tripartite mission. Work ethic, dedication and loyalty of the people in our department are the keys to our successes and all of us collectively take pride in them. I also want to acknowledge the support of the institutional leadership from TJUH, TJU and JUP.

Our clinical revenues grew by 10.4% compared with FY'08. We experienced growth in outpatient imaging, both at the hospital and at our joint venture imaging centers. Our total work RVU's grew by 5% and this was achieved without adding new faculty. This is a solid accomplishment, given the current economic climate and the local competition for patients. Clinical productivity of our faculty is above the 75<sup>th</sup> percentile of academic departments. We continued our entrepreneurial activities in conjunction with the hospital and Outpatient Imaging Affiliates (OIA) by acquiring two new MRI centers in Norristown and Collegeville. Our faculty provide coverage at both. Because of the outstanding reputation of our department in the area and some good marketing, we have already seen a significant increase in volume at those centers. The TJUH agreement to transition the Methodist Hospital radiology department to our practice was another major step forward. It was the culmination of protracted negotiations going back a decade.

I'm pleased to report that the department has been able to maintain a strong research program despite the ever-increasing demand for clinical service. We sent in 10 challenge grant proposals to the NIH under the very highly competitive American Recovery and Reinvestment Act of 2009 and Dr. Flemming Forsberg was successfully obtained funding. Later in this report there is presented long records of department grants, publications, abstracts presented, and faculty presentations at other academic institutions or national meetings. These records highlights that we remain at the forefront of scientific advancement in our field. As an example, the most competitive scientific meeting each year is that of the Radiological Society of North America (RSNA). A recent study revealed that over an 11-year period, our department had given more scientific presentations at the RSNA than any other academic radiology department in the world. We were far ahead of (in order) Massachusetts General Hospital, Stanford, University of California San Francisco, Michigan, University of Chicago, Brigham and Women's, Beth Israel Deaconess, and Washington University of St. Louis. I have been continuing to encourage our faculty to submit their best work to this meeting and we had another large presence at the RSNA this past year. We presented 34 scientific papers, 6 refresher courses and 8 educational exhibits. In addition, 6 scientific papers/exhibits were presented by residents.

In the area of education, our department continues to excel. Each year the American Board of Radiology ranks all residency programs in terms of the percent of residents who pass its certifying exam. For the past 5 years, our department has ranked number one in the country (each year we are tied with several other programs for this distinction). Determining the quality of teaching programs is inherently difficult, but this ranking is absolute proof of our program's excellence. This year we had 710 applicants for our 8

residency positions. The word must get around. Our fellowship programs are also well recognized and competitive. Our department puts on a number of CME course each year, and these have continued to be successful.

I would like to extend my thanks to many individuals for our continued success. I would like to thank JoAnn Gardner for her loyalty and outstanding assistance, Victor Sarro for his hard work and knowledge of the business and operations of radiology, and Andrea Frangos for her hard work and her ability to multitask, including outstanding assistance in compiling this report. I would also like to acknowledge the assistance of Geoffrey Gardiner, M.D., with improving operational efficiencies, Chris Merritt, M.D., for advancing initiatives in quality assurance and safety, Barry Goldberg, M.D., and Ethan Halpern, M.D., for advancing the research mission of the department, and Levon Nazarian, M.D., for his commitment to advancing the educational mission of the department.

I also wish to acknowledge all of our division heads for their leadership and assistance in furthering the department mission. Thanks to each and every member of the faculty for their hard work, commitment, dedication and team spirit. We are excited about new growth opportunities in the coming year, both in South Philadelphia at Methodist and at our satellite locations. New technological advances in radiology continue to keep us intellectually stimulated. Reflections on the key events of the past year and upcoming planned initiatives reveal a promising future for the department.

#### **FACULTY RETENTION, RECRUITMENT AND DEVELOPMENT**

Our faculty retention and recruitment remained favorable. We lost four faculty members in FY 09. Dr. Narainder Gupta went to another academic institution across town, Dr. Bentley Hollander retired, Dr. Sorcha McNally returned to her home in Ireland, and Dr. Zsuzsanna Therien relocated due to family reasons.

We successfully filled all four positions with highly qualified subspecialty radiologists. We welcomed Dr. Elizabeth Hsu in breast imaging, Dr. Achala Donuru in cardiothoracic imaging and Dr. Jeffrey McCann in interventional radiology. We also recruited Dr. Niamh Hambly and Dr. Tara Eisenberg to join the breast imaging division and Dr. Conor Shortt in the musculoskeletal radiology section for July 2009. All have excellent records of accomplishment and I expect we'll see valuable contributions from them in the coming years. We successfully recruited Dr. Christopher Roth, a former fellow and an outstanding member of our department, to take over as division director at Methodist. Six of the eight radiologists from the former private Methodist radiology group will continue on as faculty for FY 2010. Two others departed and they have been replaced by new faculty who just completed their subspecialty fellowships.

#### **FACULTY DEVELOPMENT, HONORS AND PROMOTIONS**

I am pleased to report that Dr. Carin Gonsalves and Dr. Adam Zoga were promoted to Associate Professor of Radiology, and Dr. William Morrison to Professor of Radiology. All three are outstanding and dedicated members of our faculty who have been at Jefferson for years and are richly deserving of their promotions. Many honors have been bestowed on our faculty, which are listed under individuals names in the appendix. A few are highlighted below.

Three of our faculty were honored as Top Docs by the *Philadelphia Magazine* – Dr. Daniel Brown, Dr. Adam Flanders and Dr. Alfred Kurtz. Dr. Alfred Kurtz received the prestigious William J. Frye Memorial Award given by the American Institute of Ultrasound in Medicine. He was also awarded the Mary Fisher Outstanding Educator Award by the Philadelphia Roentgen Ray Society. Dr. Ethan Halpern and Dr. Kevin Takakuwa from the Department of Emergency Medicine received the 2008 Philips CT NetForum Publication of the Year Award for their work on triple rule-out coronary CT angiography. Dr. Sandeep Deshmukh was recognized by the residents with the A. Edward O'Hara Award for his excellence in teaching. A portrait of Dr. Vijay Rao was unveiled at the University in recognition of her service and leadership at Jefferson and in the field of Radiology.

### CLINICAL ACTIVITIES

In 2008-2009, we performed a total of 347,598 procedures and showed a 2.8% growth in the practice, as compared with the last academic year. We experienced growth in all modalities save conventional radiography, which remained flat. There was 10% growth in MRI, 9.3% growth in PET, 7.4% growth in ultrasound, 2.4% growth in CT and 2.3% growth in breast imaging. Our work RVU's increased by 5% compared with the previous academic year. Jefferson Outpatient Imaging joint venture centers had an extremely successful year with 40,972 procedures being performed compared with 33,837 in the previous year, a 21% growth. These centers are well managed by Outpatient Imaging Affiliates, LLC with their aggressive marketing efforts producing positive results.

In **body MR**, several clinical services have grown. Due to strong marketing efforts by the outpatient imaging center, the MR enterography service established at Jefferson Outpatient Imaging has seen a great deal of growth. Iron quantification has become a more robust and popular program, in response to demand from hematologists. The cardiac MR program has been expanded and improved, with two MRI technologists designated as specialists in cardiac MRI. Additionally, standards for reporting hepatocellular carcinoma have been established, which has improved the service and attracted additional outside referrals, placing TJUH at the leading edge of the move towards more standardized reporting.

In **nuclear medicine**, efforts to streamline protocols and maximize manpower continued. A consultation service was developed for immediate post-operative patients with differentiated thyroid cancer, which streamlines and expedites radioiodine therapy. The protocol for pediatric and neonatal gastric reflux/aspiration imaging, identical to the method used by A.I. duPont Pediatric Hospital, was adopted. This allowed us to standardize the images for the two hospitals. Additionally, a new protocol was established, using human recombinant thyroid stimulating hormone (rhTSH) as preparation for patients with differentiated thyroid cancer undergoing FDG-PET imaging. This increases the sensitivity and specificity for recurrent tumor.

In **body CT**, the focus was on operational efficiencies and patient safety. As a major safety initiative in both CT and MR, workflow has begun to be standardized by implementing better patient questionnaires and creating technologist workflow ("time out") forms along with supplemental material to explain the processes. The 'radiology time-out' is an important measure to ensure proper imaging protocols and appropriate administration of

contrast. The new system involves reviewing and confirming the protocol and contrast several times during the imaging exam and will avoid errors.

In **ultrasound**, the continuing need for reduced waiting times for thyroid biopsy appointments allowed us to expand our service and implement a one-day a week Thyroid Center. The center offers thyroid imaging and biopsy services. The musculoskeletal ultrasound program has not yet reached its full potential, although the number of patients seen has increased by 30%. Technical personnel continue to be cross-trained in preparation for the added faculty expected to begin providing this service.

In **musculoskeletal radiology**, the ONI extremity scanner in the outpatient center was upgraded from 1.0T to 1.5T. A new procedure, sacroplasty, was introduced. The musculoskeletal group took on additional coverage responsibilities at Methodist and at the two new MRI centers in Norristown and Collegeville.

In **interventional radiology**, the service obtained a Philips ultrasound unit, which greatly assisted them in performing image-guided percutaneous interventions. Also, planning commenced for the installation of an interventional CT unit on 3 Gibbon. Interventional radiology is in general gradually shifting away from some vascular interventions and getting more into procedures like percutaneous biopsies, complex drainages, and tumor ablations. These require cross-sectional imaging capability, and the availability of both ultrasound and CT will greatly enhance the ability of our interventional radiology group to perform them effectively. We also began a new service focused upon treatment of vascular malformations. These are very complex and difficult lesions to treat and we look forward to being able to help patients with these conditions.

In **neuroradiology**, the use of contrast-enhanced MR angiography in the head and neck was expanded. Also, a relatively new procedure, MR perfusion imaging, was increasingly used in the evaluation of cerebral neoplasms.

In **cardiothoracic radiology**, daily coverage of chest CT by thoracic radiologists was provided on a routine basis. This provided the necessary subspecialty expertise in evaluating patients with chest disease. Our coronary CT angiography program did not grow as rapidly as expected (this phenomenon has been noted in many other institutions around the country), largely as a result of some controversies that have appeared in the literature over the past year. Most of our referrals for this procedure come from outside cardiologists, and we feel Jefferson cardiologists are underutilizing it.

### **PLANNED NEW CLINICAL FACILITIES AND PROGRAMS**

Jefferson Radiology continues to be on leading edge of imaging with improved current clinical programs and exciting new clinical services planned for the upcoming year. Two new scanners will be installed in **body CT**. The long awaited 256-slice iCT scanner will be installed in the upcoming year. The scanner will provide a dramatic improvement in many imaging protocols including cardiac CT imaging and liver perfusion imaging. Additionally, the 256-slice scanner may be useful in reducing the contrast dose in high-risk patients. A dedicated interventional scanner will expand the amount of cases performed in **interventional radiology**, as well as increase the flexibility in scheduling and performing cases requiring CT guidance. The wider bore of the interventional scanner will allow scans



on overweight patients that were previously not able to be scanned, and serve as a unique marketing tool.

The **ultrasound division** will expand the musculoskeletal imaging center and establish a full-time therapeutic and diagnostic service. The ultrasound division will also fully implement a program for the examination of obstetrical patients in the delivery room through a joint partnership arrangement with the Department of Obstetrics and Gynecology. Similarly, a cooperative arrangement has been established with vascular surgery to provide ultrasound examinations in the vascular surgeons' offices.

The new 1.5T MR unit at Jefferson Hospital for the Neurosciences will further expand the use of MR angiography and MR perfusion imaging in **neuroradiology**. The **musculoskeletal** and **body MR** divisions plan to continue to develop the programs established during the current year.

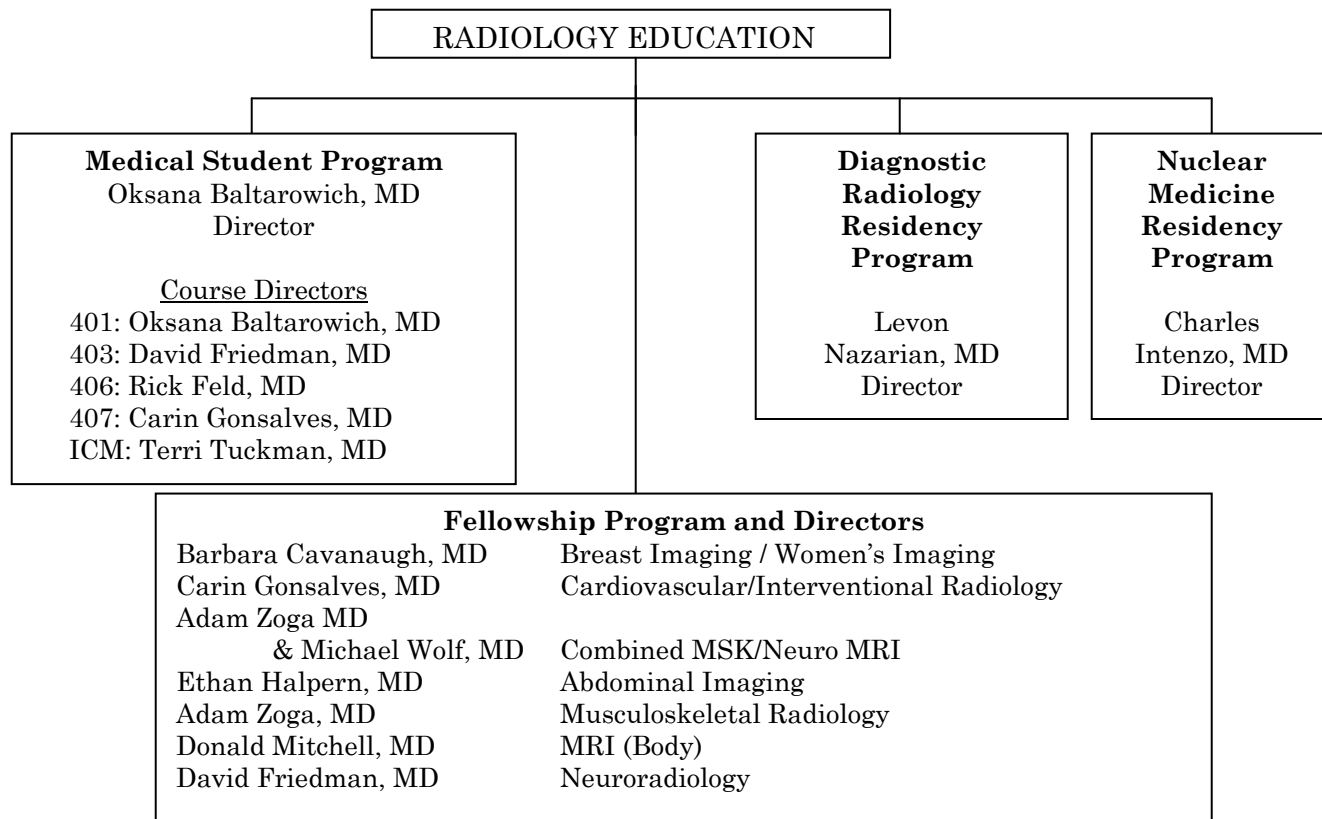
### CLINICAL INFORMATICS

The Information Technology section of the Department of Radiology continues to support the clinical needs and mission of the department. This past year, the Radiology IT section has successfully implemented various enhancements including a software upgrade to the iSite Radiology and Enterprise PACS clients and additional application program interfaces to iSite Radiology to include Presence Management, a Neuroradiology Teaching File and eRadpeer. The Enterprise Component of the iSite Radiology delivers a comprehensive exam history along with prior reports for both the radiologist and the referring physician. Enterprise PACS can be viewed throughout the institution to include the university and from home via remote access.

Other accomplishments involve the creation of a radiology internal memo, installation of new monitors for the ultrasound division to improve image quality, development of Quality Assurance and Patient Call Back folders in iSite, upgrades to the Vitrea Workstations in the neuroradiology section, creation of a CD/DVD Import Process for historic priors, comparisons, conferences and physician consults and finally, the addition of iSite PACS stations throughout the department to meet the growing need of each section.

Future planned initiatives include an upgrade to the voice recognition system (Powerscribe) and the Radiology Information System (RIS). Upgrading the RIS will allow for updates to the mammography module, patient medical history section from the hospital information system and improvements in the scheduling, billing and reporting modules. Additionally, the IT section will continue to advance the needs of the department by implementing a third party application to iSite PACS to further optimize resident workflow, a dashboard for real-time reporting, an ER Communication Tool, and optimized administrative reporting.

## EDUCATIONAL PROGRAMS



## RESIDENCY TRAINING PROGRAM

The educational programs at Thomas Jefferson University Hospital continue to be one of the major strengths of our department. Our residency program is approved for 36 residents and fully accredited by the ACGME.

The Radiology residency program is nationally recognized as one of the top programs in the country. Our faculty are committed to a high caliber of teaching in spite of increased clinical workload. The goal of our residency program is to produce competent radiologists well trained in all aspects of diagnostic radiology.

Upon finishing their training, our residents will be able to pursue a career in either an academic or private practice environment. All eight of our senior residents passed both the written and the oral portions of the American Board of Radiology Examination. We have a reputation for the highest caliber fellowship programs and we are extremely pleased that this year six of the eight residents have chosen to stay on at Jefferson for additional fellowship training. Many thanks to Levon Nazarian, M.D., for his outstanding leadership as the program director. Dr. Nazarian is ably assisted by his Residency Coordinator, Pamela Coyle.

**Residency Selection:** This year we received 710 applications for eight positions and interviewed 75 candidates. We matched all of our positions from among our top candidates. We also accepted another candidate into our DIRECT interventional radiology pathway.

The teaching and research reputation, as well availability of cutting edge technology such as multidetector CT, PET scanning and 3T MR keeps us competitive with other top institutions in the country. For the upcoming year, Dr. Sandeep Deshmukh will serve as Chairman of the Residency Selection Committee and work closely with Dr. Nazarian.

Resident research is actively encouraged. All residents are required to complete at least one project by the end of their third year, though many do more. Many of our residents presented papers at national meetings. One of our graduating seniors, Luis Beltran, M.D., received the RSNA Research and Education Foundation Roentgen Resident Research Award which was presented to him at graduation. Dr. Hema Thaker participated in the RSNA/ARRS/AUR Introduction to Research Program, and Dr. Anton Delport participated in the Siemens-AUR Radiology Resident Academic Development (SARRAD).

Residents receive extensive clinical training in all areas of diagnostic Radiology. Clinical rotations are in compliance with guidelines required by the ACGME and/or recommended by the Association of Program Directors in Radiology (APDR). Almost all training takes place on the Jefferson campus, but residents also get an outstanding education in pediatric radiology, spending a total of 3 months at A.I. duPont.

Residents Elizabeth Ives, M.D., Suzanne Long, M.D., Jeffrey Mathews, M.D. Kristen McClure, M.D. and Ariel Prager, M.D. received recognition for excellence in medical student teaching.

### **TRAINING PROGRAMS FOR FELLOWS**

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

The **Abdominal Imaging Fellowship**, under the direction of Dr. Ethan Halpern is an ACGME accredited program. Seven fellows graduated: two went into academics, one (Dr. Lee) stayed with us at Methodist Hospital, and of the remaining four graduates, two joined private practice, one joined a nighthawk and one stayed with us to pursue a second fellowship in neuroradiology.

The **Vascular and Interventional (VIR) Fellowship**, under the direction of Carin Gonslaves, M.D., is an ACGME accredited one year program. We currently match two fellows per year in the traditional VIR fellowship. Both graduates, Drs. Goldman and Iyer have joined private practice groups. In addition, we offer the DIRECT pathway program, which is a 4 year combined Radiology Residency and Vascular and Interventional Radiology Fellowship that can be entered after completing two clinical years of training. Currently we have four DIRECT Pathway residents in our program with our first graduate next fiscal year.

The **Body MRI Fellowship**, under the direction of Donald Mitchell, M.D., has remained popular because of the quality of faculty, the large and diverse case volume, and because Body MRI continues to be one of the most rapidly expanding areas of clinical practice. This fellowship includes training in all areas of body MRI, including cardiac, thoracic, vascular, abdominal, pelvic, and breast applications. The graduating fellow, Dr. Yang joined a private practice group in California.

The **Musculoskeletal Fellowship**, under the direction of Adam Zoga, M.D., graduated three strong fellows: George Paul Hobbs, who has stayed on as faculty in the department at Methodist Hospital, Jeffrey Leichter and Ketan Naran, who have both taken private practice positions. This was a very strong clinical team with academic productivity as well. The musculoskeletal fellowship positions remain highly coveted as we received more than 32 applications for the 2009-2010 positions. From that group, we accepted our top two choices, Amy Austin and Kristin McClure, who are both currently radiology residents at Jefferson. Additionally, a third externally funded position was accepted by Frank Mullens.

The **Neuroradiology/ENT Radiology Fellowship**, under the direction of David Friedman, M.D., graduated four fellows. We have successfully recruited Dr. Neeta Rao to join our faculty. The remaining three graduating fellows obtained excellent job opportunities in private practice.

The **Breast Imaging Fellowship**, under the direction of Barbara C. Cavanaugh, M.D., offers training in screening and diagnostic mammography, breast ultrasound, breast MRI, image guided percutaneous needle localization and biopsy using mammography, ultrasound and MRI. Dr. Vargo joined The Nighthawk Radiology group in Australia.

A combined **Musculoskeletal/ Neuro MRI Fellowship**, under the direction of Michael Wolf, M.D. and Adam Zoga, M.D., is a unique program. Fellows receive training in MRI of musculoskeletal diseases as well as in neuroradiology. This remains a very popular fellowship. The three graduates have joined private practice groups.

### **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 Terri Tuckman, M.D. and Oksana Baltarowich, M.D., who willingly contributed their time to this important teaching exercise for Jefferson medical students. Dr. Tuckman continued to serve as the coordinator for this course and has done an outstanding job. The radiology topics presented were Women's Imaging and Abdominal Imaging.

I wish to acknowledge contributions of Dr. Alfred Kurtz in his role as the Director of medical student education for the past 5 years. Dr. Oksana Baltarowich will assume these responsibilities effective July 2009. The radiology electives remained quite popular and were completed by 127 members of the senior class, either here or at an outside institution.

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, CVIR, Neuroradiology, and Ultrasound/CT/MRI.

The Neuroradiology elective was completed by 9 senior medical students. Electives in Cross-Sectional Imaging and CVIR were completed by 8 and three students, respectively.

All of these courses received rave reviews from the students. I wish to thank all the course coordinators for a fine job – Dinesh Sharma, M.D., for General Radiology, David Friedman, M.D., for Neuroradiology, Rick Feld, M.D., for Cross-Sectional Imaging, and Carin Gonsalves, M.D., for CVIR.

### **CONTINUING MEDICAL EDUCATION PROGRAMS**

***Division of Musculoskeletal and General Radiology:*** The Jefferson Musculoskeletal Imaging Symposium with a Special Focus on Anatomic and Imaging Correlation in the Hip and Spine was held in July 2008, directed by Angela Gopez, M.D. with 50 attendees. A Musculoskeletal Imaging Symposium with a special focus: Best of the Bone Room, directed by Adam Zoga, M.D., was held in October 2008 with 50 attendees.

***Radiology Grand Rounds and Radiology Research Conferences:*** Twenty-two weekly conferences were held during the 2008-2009 in Radiology, alternating between Grand Rounds, Radiology Research Conferences and Journal Clubs. Grand Round speakers covered a wide range of interesting topics in all areas of radiology. The Radiology Research Conferences allowed faculty, residents, and fellows in the department the opportunity to present the results of their research activities. Additionally, after each presentation, a discussion of the study design and methodology provided a useful learning session for all.

***First Annual David C. Levin Lecture:*** The Department was pleased to establish an endowed lecture in honor of Dr. David Levin, Professor Emeritus and former chair of the Department. Dr. Levin provided outstanding leadership in the Department during his tenure as chairman from 1986-2002 and is a nationally recognized leader in Radiology. He has been honored with gold medals from the American College of Radiology, American Roentgen Ray Society, Association of University radiologists, and the Pennsylvania Radiological Society. The inaugural lecture, “Reinventing Radiology in the Digital Age” was given by Dr. James Thrall from Harvard Medical School on Thursday, September 25, 2009.

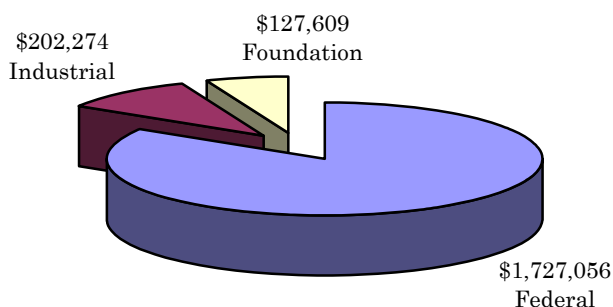
***Jefferson Ultrasound Research and Education Institute (JURED):*** The Jefferson Ultrasound Research and Education Institute, under the leadership of Barry B. Goldberg, M.D., continued its educational programs with more than 40 courses offered in all aspects of ultrasound. The annual Leading Edge meeting, which was held at the Borgata Casino Resort in Atlantic City, was a success with attendance of greater than 1,200 people. The program was supported by a wide variety of exhibitors and lecturers from this country and abroad providing symposia on Ob/Gyn, vascular ultrasound imaging, ultrasound physics, sonomammography, musculoskeletal, pediatric ultrasound, elastography, fetal nuchal translucency, ultrasound contrast agents, emergency and critical care and requisites.

### **RESEARCH ACTIVITIES**

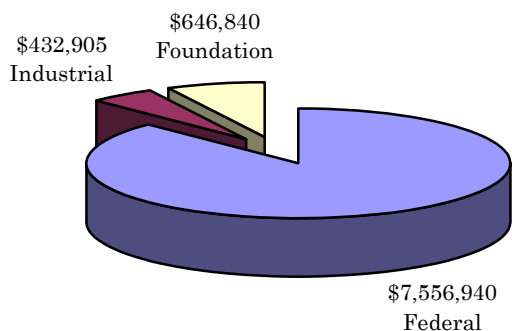
Although the demands of clinical activities continue to increase, as indicated in our clinical productivity, the department’s research productivity remained strong. There were 22 NIH or other federal grants active during the year, in addition to 3 foundation or medical society grants, and another 11 industrial grants. As a group, these grants brought in total current year funding of \$2,056,940 including \$1,576,875 in direct support and \$480,065 in indirect. We had 244 publications in the medical literature (including journal articles, books and

book chapters, and published abstracts) over the past fiscal year. Additionally, with the influx of money to the NIH through the stimulus packages, the department took advantage of those opportunities by submitting 12 grants under the American Recovery and Reinvestment Act of 2009. Dr. Dinesh Sharma and Ms. Andrea Frangos had their Judy Dubbs Research Grant Awards renewed to support and honor the outstanding work of our successful researchers.

#### 2008-2009 Fiscal Year Funding



#### Total Funding (all budget years)



The **Jefferson Molecular and Biomedical Imaging Core Facility**, under the direction of Mathew Thakur, Ph.D., has had another productive year continuing to expand its role in pre-clinical research on campus. This year, a new micro PET, Inveon (Siemens, Knoxville, TN), was obtained through an NIH small equipment grant program which Dr. Thakur served as the principal investigator. The Inveon animal PET scanner has the highest resolution of all small animal PET scanners commercially available today. As a result of the acquisition, a larger room was required to house the growing imaging facility and the facility was relocated in December 2008 from 1018 Bluemle Life Sciences Building to a newly renovated laboratory at 387 Jefferson Alumni Hall.

In mid August 2008, a new facility manager, Dr. Devdhas Devkumar was recruited when the previous manager, Dr. Cao relocated to Canada. A medical physicist by training, Dr. Devakumar significantly improved the image processing. In particular he added image surface rendering capability through Amira, that improved image quality that is equal to or better than some leading small animal imaging centers in the country.

Drs. Thakur and Kumar continued to work on converting the Mosaic PET scanner in to a much needed SPECT scanner to further expand the capabilities of the small animal

imaging facility. In addition, Dr. Vijay Rao submitted a high end instrumentation grant application to NIH for acquisition of a 7T animal MR unit. If awarded, the animal imaging facility will be at the cutting edge and will greatly enhance the research performed by the Jefferson researchers.

The **MR physics program**, under the leadership of Song Lai, Ph.D., continued to investigate novel MR imaging techniques that provide a new, non-invasive approach to evaluate normal and diseased brain characteristics and functioning. Working with the Departments of Neurosurgery, Neurology, Pathology, and Pediatrics, the program has been productive in the investigation of lead poisoning, multiple sclerosis, epilepsy, Parkinson's Disease, Klinefelter's Syndrome, and brain tumors.

Our division of **diagnostic ultrasound**, under the leadership of Dr. Barry Goldberg, continued to be highly productive. A variety of basic science, animal, and clinical research studies were underway for the development and evaluation of ultrasound contrast agents and novel imaging techniques to improve the detection of diseases.

Dr. Goldberg continued his NIH-funded investigation into the use of ultrasound contrast agents for imaging lymphatic channels and sentinel lymph nodes in a swine model, which led to additional NIH funding focusing on secondary lymph nodes. Work on a five-year NCI grant with Dr. Margaret Wheatley at Drexel University to develop novel ultrasound contrast agents continued. Dr. Forsberg completed his American Heart Association project examining the use of subharmonic pressure estimation to evaluate the heart and obtained funding from the Department of Defense employing the same technique to monitor neoadjuvant therapy of breast cancer. He also continued his NIH work using the technique in the portal vein. Ji-Bin Liu, M.D. conducted an industrial funded trial of fluorescence guided surgery with a novel optical imaging unit. Dr. Ethan Halpern continued work on his NIH-funded clinical trial to evaluate prostate cancer detection with contrast-enhanced ultrasound following pretreatment with Dutasteride.

In **breast imaging**, the NCI- funded cooperative group clinical trial to define the most effective modalities for breast cancer screening was completed and publication of the results is forthcoming. Dr. Cavanaugh began her participation in a multicenter clinical trial examining the use of elastography to evaluate breast lesions.

In **nuclear medicine**, Dr. Thakur continued his study on the development of probes for imaging oncogene expression, including his NIH-funded work to examine Cu-64 PET imaging of breast cancer and a current investigation of Cu-64 for prostate cancer imaging and began the human subject feasibility study. Dr. Intenzo completed his participation in the imaging portion of a trial sponsored by the American College of Radiology Imaging Network and the Radiation Therapy Oncology Group that evaluated PET for assessment of response to therapy in nonsmall cell lung cancer. With PET imaging at the forefront of clinical molecular imaging, Dr. Intenzo participated in a multicenter study utilizing F-18-RGD-K5 for malignant melanoma.

In **body MRI**, Dr. Mitchell continued work with Hepatology that includes rapid MRI for noninvasive monitoring of fatty liver and mesenteric fat in response to treatment with Silymarin with pathological correlation. Additionally, Dr. Mitchell began the clinical phase of a study funded by the Pennsylvania Department of Health through the American College

of Radiology Imaging Network collaborative group that will monitor colorectal cancer response to treatment with dynamic contrast MRI. To date, we are the only site that has enrolled any patients. Research examining liver and cardiac iron measurement continued and will likely lead to increased research opportunities in collaboration with Philips Medical Systems North America.

In **neuroradiology/ head and neck radiology**, Dr. Flanders continued his work on a grant funded by the NIH to create an integrated biomedical informatics infrastructure for cancer research imaging. He also continued his work evaluating the use of novel MR biomarkers to predict outcome in spinal cord injury and primary glial brain tumors. Dr. Tartaglino examined the manifestation of acute cocaine on MR imaging and Dr. Friedman evaluated the effect of a utilization management program based on the division's participation in HealthHelp RadConsult. Dr. Wolf completed participation in an cooperative group study funded by the NIH examining imaging of glioblastomas.

In **body CT**, Dr. Halpern was awarded a research grant from Philips Medical Systems North America for the best paper on CT imaging, as voted by the online community, and will investigate the cost-effectiveness of coronary CT angiography as a triple-rule-out exam. Manuscripts studying predictors of acute appendicitis and imaging findings after uterine artery embolization were published during the past year.

In the **interventional radiology division**, several clinical trials were conducted with Dr. Brian Carr of the Department of Medical Oncology utilizing Yttrium-90 radiolabeled microspheres. The division also published work on immunembolization in patients with hepatic metastases from uveal melanoma and other malignant liver tumors.

Our **musculoskeletal group** continued to be productive in their research publications. Dr. Zoga continued his work in imaging of athletic pubalgia, describing optimal imaging techniques, as well as the anatomy, pathology, and MRI findings in the sports hernia. Dr. Morrison completed his subaward from Drexel University for an NIH grant awarded to study the biomechanics of clubfoot deformity. Other studies included investigations into indirect soft-tissue and osseous signs on knee MRI of surgically proven meniscal tears, prediction of midfoot instability in the subtle Lisfranc injury, and appropriateness criteria on suspected osteomyelitis in patients with diabetes mellitus.

Our **health services research** group (Dr. Levin, Dr. Parker, Andrea Frangos and I) continued to be highly productive in studying practice patterns and utilization trends in diagnostic imaging and interventions. We received continued funding from the American College of Radiology. Dr. Parker received an award from the American Institute of Ultrasound in Medicine to examine the cost savings associated with substituting ultrasound for CT in the evaluation of appendicitis. Over the past year, our Center for Research on Utilization of Imaging Services (CRUISE) has had 10 abstract published and 10 papers published.

### **OPPORTUNITIES FOR EXTRAMURAL FUNDING**

As mentioned, the department attempted to take advantage of the American Recovery and Reinvestment Act of 2009 mechanisms and submitted 12 grants to the NIH under those announcements. Overall, the department has 19 pending NIH grant proposals, which are



listed in Table 2 of the appendix. There are also two pending industry grants. The proposals cover a broad spectrum of radiology research.

The American College of Radiology Imaging Network (ACRIN), an NCI- funded cooperative group, remains a good source of extramural funding for the department. There are additional projects, which are under development at ACRIN, which we hope to participate in. While we will continue to pursue grant funds through the NIH and radiology foundations, many of which provide seed grants to gather pilot data for larger grant submissions, we also plan on pursuing funding from industry to sponsor our investigator initiated projects.

Partnerships with industry are also a rich source of funding and research support. Additionally, research partnerships allow us to serve as beta sites for equipment and bring attention to our research endeavors. We have formed collaborative relationships with Philips Medical Systems North America and and MicroMRI for evaluation and optimization of imaging equipment and techniques. These partnerships have allowed us to optimize many of our imaging techniques with improvements in imaging protocols and analysis, thereby improving patient care.

# APPENDIX I

## PUBLICATIONS

### ***Journal Articles:***

1. Amirkhanov NV, Dimitrov I, Opitz AW, Zhang K, Lackey JP, Cradi CA, Lai S, Wagner NJ, Thakur ML, Wickstrom E: Design of (Gd-DO3A)n-polydiamidopropanoyl-peptide nucleic acid-d(Cys-Ser-Lys-Cys) magnetic resonance contrast agents. *Biopolymers* 2008; 89:1061-1076.
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## **APPENDIX II**

### **FORMAL SCIENTIFIC PRESENTATIONS**

#### **OKSANA BALTAROWICH, M.D.**

October 14, 2008	Visiting Professor, Department of Radiology, Kennedy Memorial Hospital, University Medical Center, Stratford, NJ <ul style="list-style-type: none"><li>• “Sonography of the normal and abnormal first trimester”</li><li>• “Ectopic pregnancy”</li></ul>
October 15-19, 2008	2008 Society of Diagnostic Medical Sonographers Annual Conference, Mashantucket, CT <ul style="list-style-type: none"><li>• “Sonography of renal disorders (excluding masses)”</li><li>• “Uterine myometrial disorders”</li><li>• “Pitfalls in transvaginal sonography”</li></ul>
March 7, 2009	18 <sup>th</sup> Annual Diagnostic Ultrasound Symposium, Toledo Hospital/ProMedica Health System, Perrysburg, OH <ul style="list-style-type: none"><li>• “Sonography of diffuse liver disease”</li><li>• “Sonography of the biliary system”</li></ul>
March 25, 2009	Department of Radiology Grand Rounds, NewYork-Presbyterian Hospital, The University Hospital of Columbia and Cornell, New York, NY <ul style="list-style-type: none"><li>• “Sonography of uterine myometrial disorders”</li><li>• “Sonohysterography: Usual and unusual findings”</li><li>• “Obstetrical case review”</li></ul>
April 1, 2009	Department of Radiology Grand Rounds, Mount Sinai Medical Center, New York, NY <ul style="list-style-type: none"><li>• “Sonohysterography: Usual and unusual findings”</li><li>• “Obstetrical case review”</li></ul>
April 2-5, 2009	2009 American Institute of Ultrasound in Medicine Annual Convention, New York, NY <ul style="list-style-type: none"><li>• “Role of computed tomography in assessing an adnexal mass”</li></ul>
April 26- May 1, 2009	American Roentgen Ray Society 109 <sup>th</sup> Annual Meeting, Boston, MA <ul style="list-style-type: none"><li>• “2009 case-based approach to diagnosis: A case-based imaging review course: Ultrasound gynecology”</li></ul>
May 19-22, 2009	The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ <ul style="list-style-type: none"><li>• “Ultrasound general imaging – The requisites”</li><li>• “Abdominal ultrasound – Part I (liver, gallbladder, and bile ducts)”</li><li>• “Abdominal ultrasound – Part II (pancreas and spleen)”</li><li>• “Women's imaging symposium – Advances in OB/GYN”</li><li>• “Sonography of uterine myometrial disorders”</li><li>• “Sonohysterography: Usual and unusual findings”</li></ul>

## **DANIEL BROWN, M.D.**

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|----------------------------------|---|
| October 10, 2008                 | 2 <sup>nd</sup> Annual Hepatology and Liver Transplantation Nursing Conference, American Liver Foundation, Delaware Valley Chapter, Philadelphia, PA <ul style="list-style-type: none"><li>• “Treatment of hepatocellular carcinoma: Bridging the gap to transplanation”</li></ul>  |
| October 15, 2008                 | Society of Interventional Radiology Webinar Series <ul style="list-style-type: none"><li>• “There are no chip shots: Triaging and treating tough oncology cases: Ablation”</li></ul>  |
| November 30-<br>December 5, 2008 | 94 <sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none"><li>• “The science of intervention, new developments and technologies”</li></ul>  |
| January 17-18, 2009              | Inaugural Symposium on Clinical Interventional Oncology, in collaboration with the International Symposium on Endovascular Therapy, Hollywood, <ul style="list-style-type: none"><li>• “Chemoembolization for HCC: Patient selection and technique”</li><li>• “Primer on biopsies: What to biopsy and how”</li><li>• “Consensus panel: Discussion on achieving”</li><li>• “Consensus on the preferred treatment strategy for HCC”</li><li>• “Live case panel: Embolization of carcinoid tumor”</li><li>• “Live case panel: Chemoembolization of hepatocellular carcinoma”</li></ul> |
| March 7-12, 2009                 | 34 <sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology, San Diego, CA <ul style="list-style-type: none"><li>• “Primer on Y90 microspheres”</li><li>• “Renal tumor board”</li><li>• “Embolization in interventional oncology: TACE, bland, and portal vein”</li><li>• “Enteral access, the big picture: Who, when, and why”</li></ul>   |
| April 24, 2009                   | Spring Symposium, Delaware Valley Chapter, American Association of Physicists in Medicine, Philadelphia, PA <ul style="list-style-type: none"><li>• “Radioembolization with 90Y microspheres: Technique and outcomes”</li></ul>   |
| May 14-16, 2009                  | 4 <sup>th</sup> Annual SIR Fellows Spring Practicum, Evanston, IL <ul style="list-style-type: none"><li>• “Tumor ablation: Principles, device selection and tips for success”</li><li>• “Renal ablation: How I do it”</li><li>• “My top 10 interventional oncology disasters: How to avoid them”</li><li>• “Enteral access, the big picture: Who, when, and why”</li></ul>  |
| June 5, 2009                     | Tumor Board, Beth Israel Newark Hospital, Newark, NJ <ul style="list-style-type: none"><li>• “Evolving therapies in interventional oncology”</li></ul>  |

### **DIANE DEELY, M.D.**

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|---------------------|--|
| July 12-13, 2008    | Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"><li>• “Percutaneous intervention in the spine”</li></ul>             |
| October 18-19, 2008 | Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"><li>• “Soft tissue tumors and image guided tumor sampling”</li></ul> |
| June 13-14, 2009    | Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"><li>• “Tumor and tumor-like conditions of the foot”</li></ul>        |

### **SANDEEP DESHMUKH, M.D.**

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|----------------------------------|--|
| November 30-<br>December 5, 2008 | 94 <sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none"><li>• “Peripheral arterial disease: Imaging findings using a multimodality approach” (exhibit)</li></ul> |
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### **RICK FELD, M.D.**

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|---------------------|---|
| October 24-26, 2008 | 18 <sup>th</sup> Annual Meeting of the Society of Radiologists in Ultrasound, Philadelphia, PA <ul style="list-style-type: none"><li>• “Decision making in interventional ultrasound”</li></ul>   |
| May 14, 2009        | 27 <sup>th</sup> Annual Barry B. Goldberg Lecture and Meeting of the Israel Society for Diagnostic Ultrasound in Medicine, Ramat Gan, Israel <ul style="list-style-type: none"><li>• “Interventional ultrasound – How do I do it”</li><li>• “Thyroid ultrasound including elastography and biopsy”</li><li>• “Ultrasound versus CT in the female pelvis”</li><li>• “Ultrasound and CT ‘Aunt Minnies’”</li></ul> |
| May 19-22, 2009     | The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ <ul style="list-style-type: none"><li>• “Interventional ultrasound including thyroid biopsy”</li><li>• “Thyroid elastography – An international multicenter trial”</li></ul>  |

### **ADAM FLANDERS, M.D.**

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|----------------------------------|---|
| October 13-15, 2008              | Neuroradiology Essentials, sponsored by University of Pennsylvania School of Medicine, Philadelphia, PA <ul style="list-style-type: none"><li>• “MRI update in spinal trauma and spinal cord injury”</li><li>• “Vascular diseases of the spinal cord”</li></ul>   |
| November 30-<br>December 5, 2008 | 94 <sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none"><li>• “MIRC teaching file converter: An efficient mechanism for repurposing existing teaching file content into the MIRC document format”</li></ul> |

- “Using RSNA’s MIRC teaching file software: A hands on course”
- “What are radiologists searching for? Obtaining quality information at the desktop, radiology specific search engines and beyond”
- “So many images, so little time. Advanced imaging techniques. Practical informatics for the practicing radiologist: Part two” (in conjunction with the Society for Imaging Informatics in Medicine)
- “Continuing medical education in the clinical practice (basic imaging)”

May 16-21, 2009

American Society of Neuroradiology 47<sup>th</sup> Annual Meeting and NER Foundation Symposium 2009, Vancouver, BC, Canada

- “Mapping human spinal cord injury with diffusion tensor imaging”
- “Terminology and reporting system for assessing primary glial brain tumors: Defining imaging biomarkers to predict clinical outcomes”

## **FLEMMING FORSBERG, PH.D.**

September 17, 2008

Michigan Sonographers’ Society Meeting, Southfield, MI

- “Advances in ultrasound imaging: Marketing or reality?”

October 3, 2008

Visiting Professor, Departments of Mechanical Engineering and Electrical and Computer Engineering, University of Delaware, Newark, DE

- “Contrast enhanced subharmonic imaging: A new diagnostic tool”
- “Applying real-time noninvasive pressure estimation obtained from subharmonic contrast microbubble signals” (poster)

November 8-12, 2008

American Heart Association – Scientific Sessions 2008, New Orleans, LA

- “Implementation of noninvasive subharmonic pressure estimation on commercial ultrasound scanner” (poster)

November 2-5, 2008

2008 IEEE International Ultrasonics Symposium, Beijing, China

- “Adherence of platelet and fibrin targeted ultrasound contrast bubbles to human blood clots *in vitro*”
- “Image processing algorithms for cumulative maximum intensity subharmonic ultrasound imaging: A comparative study in the breast” (poster)

November 30-  
December 5, 2008

94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL

- “Implementing real-time noninvasive subharmonic pressure estimation”
- “In vitro adherence of platelet and fibrin targeted US contrast bubbles to human blood clots”



- “Comparing image processing techniques for cumulative maximum intensity subharmonic US imaging of breast lesions”
- April 2-5, 2009      2009 American Institute of Ultrasound in Medicine Annual Convention, New York, NY
- “Principles of elastography and tissue strain imaging”
  - “Toxicology study of surfactant-stabilized ultrasound contrast agents in adult rats”
  - “Vascular applications of 3-dimensional ultrasound”
  - “Noninvasive subharmonic pressure estimation: In vitro experiments and modeling”
- May 4-6, 2009      Neurovascular Ultrasound Course, Wake Forest University School of Medicine, Winston-Salem, NC
- “Principles of sonography”
  - “Principles of Doppler ultrasound”
- May 19-22, 2009      The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ
- “In vivo subharmonic pressure estimation”
  - “Innovations in vascular imaging and Doppler”
- June 10-12, 2009      34<sup>th</sup> International Symposium on Ultrasonic Imaging and Tissue Characterization, Washington, DC
- “In vivo noninvasive cardiac subharmonic pressure estimation”

### **DAVID FRIEDMAN, M.D.**

- October 13-15, 2008      Neuroradiology Essentials, sponsored by University of Pennsylvania School of Medicine, Philadelphia, PA
- “Imaging of adhesive arachnoiditis”
  - “Infectious diseases of the brain and its linings”
- May 16-21, 2009      American Society of Neuroradiology 47<sup>th</sup> Annual Meeting and NER Foundation Symposium 2009, Vancouver, BC, Canada
- “Effectiveness of non-physician personnel assessing appropriateness of outpatient neuroradiologic imaging studies in a radiology benefit management program (HealthHelp)”
  - “Variability in procedure withdrawal rates among academic neuroradiologists participating in a radiology peer-to-peer ordering support program: Implications for radiology benefit management programs”

### **ERIC GINGOLD, PH.D.**

- July 27-31, 2008      The 50<sup>th</sup> Annual Meeting of the American Association of Physicists in Medicine, Houston, TX
- “Dose and image quality evaluation of a mobile CT scanner for head and neck imaging” (poster)”

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|----------------------------------|--|
| November 30-<br>December 5, 2008 | 94 <sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none"> <li>• “A practical method for estimating the 2-dimensional modulation transfer function (2D-MTF) of digital imaging systems using a star resolution test pattern” (poster)</li> </ul> |
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**BARRY GOLDBERG, M.D.**

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| October 24-26, 2008 | 18 <sup>th</sup> Annual Meeting of the Society of Radiologists in Ultrasound, Philadelphia, PA <ul style="list-style-type: none"> <li>• “The detection of secondary lymph nodes using a tissue-specific ultrasound contrast agent”</li> <li>• “Update on ultrasound contrast agents in the United States”</li> </ul>                                 |
| April 2-5, 2009     | 2009 American Institute of Ultrasound in Medicine Annual Convention, New York, NY <ul style="list-style-type: none"> <li>• “When will we get to use it? Ultrasound contrast and the FDA”</li> <li>• “Contrast-enhanced ultrasound detection of secondary lymph nodes”</li> </ul>   |
| May 5, 2009         | Department of Radiology Grand Rounds, Hospital of the University of Pennsylvania, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Ultrasound education in developing countries”</li> <li>• “Interesting case presentation”</li> </ul>   |
| May 19-22, 2009     | The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ <ul style="list-style-type: none"> <li>• “Update on contrast agents”</li> <li>• “Advances in ultrasound imaging”</li> <li>• “When will we get to use it? Ultrasound contrast agents and the Food and Drug Administration”</li> </ul> |

**CARIN GONSALVES, M.D.**

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| November 14-16, 2008             | 93 <sup>rd</sup> Annual Meeting of the Pennsylvania Radiological Society, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Identification and embolization of vascular loops prior to catheter-directed treatment of primary and secondary hepatic malignancies”</li> </ul> |
| November 30-<br>December 5, 2008 | 94 <sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none"> <li>• “Spectrum of imaging findings on MRI and CT after uterine artery embolization”</li> </ul>                                  |
| March 6-10, 2009                 | European Congress of Radiology 2009, Vienna, Austria <ul style="list-style-type: none"> <li>• “Spectrum of imaging findings on MRI and CT after uterine artery embolization”</li> </ul>   |

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| March 7-12, 2009         | 34 <sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology, San Diego, CA <ul style="list-style-type: none"> <li>• “Identification and embolization of vascular loops prior to catheter-directed treatment of primary and secondary hepatic malignancies”</li> </ul> |
| April 26-<br>May 1, 2009 | American Roentgen Ray Society 109 <sup>th</sup> Annual Meeting, Boston, MA <ul style="list-style-type: none"> <li>• “Spectrum of imaging findings on MRI and CT after uterine artery embolization”</li> </ul>   |
| May 29-<br>June 2, 2009  | 45 <sup>th</sup> Annual Meeting of the American Society of Clinical Oncology, Orlando, FL <ul style="list-style-type: none"> <li>• “Selective internal radiation therapy (SIRT) as salvage therapy for uveal melanoma hepatic metastases”</li> </ul>  |

**ANGELA GOPEZ, M.D.**

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| October 18-19, 2008 | Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Knee collaterals and corners”</li> <li>• “MRI and MRA of the elbow”</li> <li>• “Medial elbow pain in the throwing athlete”</li> </ul>  |
| July 12-13, 2008    | Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Anatomical and imaging correlation of the hip”</li> <li>• “Imaging of hip arthropathy”</li> <li>• “Post-operative imaging of the hip”</li> <li>• “Anatomical and imaging correlation of the cervical spine”</li> <li>• “Spine trauma”</li> <li>• “Hardware lingo”</li> <li>• “Anatomical and imaging correlation of the lumbar spine”</li> </ul> |
| March 26, 2009      | Department of Radiology Grand Rounds, AI Dupont Hospital, Wilmington, DE <ul style="list-style-type: none"> <li>• “MR imaging of ‘pediatric’ sports imaging”</li> <li>• “Glenohumeral instability”</li> </ul>  |
| June 13-14, 2009    | Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Anatomical and imaging correlation of the wrist”</li> <li>• “Peroneal tendon pathology”</li> <li>• “CT imaging of the ankle”</li> </ul>  |

**ETHAN HALPERN, M.D.**

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| September 16, 2008 | Department of Radiology Grand Rounds, Bryn Mawr Hospital, Bryn Mawr, PA <ul style="list-style-type: none"> <li>• “Update on coronary CT angiography”</li> </ul> |
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September 26, 2008	<p>5<sup>th</sup> Annual Alumni Weekend CME Symposium, Thomas Jefferson University, Philadelphia, PA</p> <ul style="list-style-type: none"> <li>• “CT evaluation of the coronary arteries”</li> </ul>
November 30- December 5, 2008	<p>94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL</p> <ul style="list-style-type: none"> <li>• “Comparison of image quality and arterial enhancement with a dedicated coronary CTA protocol versus a triple rule-out coronary CTA protocol”</li> <li>• “A novel approach to dose reduction for the breast with coronary CTA: Angled axial image acquisition”</li> <li>• “Prostate cancer detection with contrast-enhanced ultrasound using a flash replenishment imaging technique: MicroFlow imaging”</li> <li>• “Evaluation of a "triple rule-out" coronary CT angiography protocol using 64-slice multidetector computed tomography in low-to-moderate risk Emergency Department patients with suspected acute coronary syndrome”</li> <li>• “Differences in aortic valve area measured by CT planimetry and echocardiography (continuity equation) are related to divergent estimates of left ventricular outflow tract area”</li> <li>• “In vitro assessment of coronary stents using dual energy CT (DECT) with a novel multienergy spectral viewer”</li> <li>• “Spectral CT angiography: Emerging applications and imaging concepts”</li> </ul>
January 12-13, 2009	<p>AdMeTech Foundation Consensus Conference on Prostate Imaging, Bethesda, MD</p> <ul style="list-style-type: none"> <li>• “Ultrasound imaging for prostate cancer: Overview of current state of the art”</li> </ul>
April 29, 2009	<p>Annual Meeting of the Cardiovascular Institute of Philadelphia, Philadelphia, PA</p> <ul style="list-style-type: none"> <li>• “Choosing between coronary CTA and a nuclear stress test for evaluation of CAD”</li> </ul>
May 19-22, 2009	<p>The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ</p> <ul style="list-style-type: none"> <li>• “GU sonography of the urinary bladder, scrotum and prostate”</li> <li>• “Prostate elastography – Where are we going?”</li> <li>• “Contrast targeted prostate biopsies: The TJU experience”</li> </ul>
June 25-27, 2009	<p>Minimally Invasive Intervention for Localized Prostate Cancer, sponsored by the NYU Post-Graduate Medical School, New York, NY</p> <ul style="list-style-type: none"> <li>• “Doppler and contrast-enhanced ultrasonography for localization of prostate cancer”</li> </ul>

### **CHARLES INTENZO, M.D.**

- November 30-  
December 5, 2008
- 94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- “Is there a relationship between the incidence of radioiodine-induced gastritis and the dosage of I-131 administered to patients with differentiated thyroid cancer?”
  - “The scintigraphic presentations and clinical outcome of subclinical hyperthyroidism”
  - “Are emergency room physicians justified in ordering lung V/Q scans in sickle cell patients evaluated in the emergency room for acute chest syndrome?”

### **DAVID KARASICK, M.D.**

- July 12-13, 2008
- Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA
- “Plain film diagnosis in postoperative cervical spine complications”
- October 18-19, 2008
- Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA
- “Benign and malignant osseous lesions in the lower extremity”
- June 13-14, 2009
- Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA
- “Plain film diagnosis of arthropathies of the ankle and foot”

### **SUNG KIM, M.D.**

- June 13-17, 2009
- Society of Nuclear Medicine 56<sup>th</sup> Annual Meeting, Toronto, Ontario, Canada
- “Temporal changes of FDG uptake in post radiation pneumonitis”

### **ALFRED KURTZ, M.D.**

- April 2-5, 2009
- 2009 American Institute of Ultrasound in Medicine Annual Convention, New York, NY
- “Ultrasound: Past and present. What is its future?” (William J Fry Memorial Lecturer)
- May 27, 2009
- Visiting Professor, Department of Radiology, Bryn Mawr Hospital, Bryn Mawr, PA
- “Case presentation to residents”
- May 19-22, 2009
- The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ
- “Obstetrics part I (1<sup>st</sup> trimester, ectopic pregnancy)”
  - “Obstetrics part II (2<sup>nd</sup> and 3<sup>rd</sup> trimester)”
  - “Ultrasound general imaging. The requisites” (co-director and moderator)

## **SONG LAI, PH.D.**

- December 5-9, 2008      62<sup>nd</sup> Annual Meeting of the American Epilepsy Society, Seattle, WA
- “The functional neuroanatomy of implicit memory in left temporal lobe epilepsy”
- April 18-24, 2009      International Society for Magnetic Resonance in Medicine 17<sup>th</sup> Annual Scientific Meeting and Exhibition, Honolulu, HI
- “Elevated working memory brain activation in adolescents with early childhood lead exposure”
- May 16-21, 2009      American Society of Neuroradiology 47<sup>th</sup> Annual Meeting and NER Foundation Symposium 2009, Vancouver, BC, Canada
- “Mapping human spinal cord injury with diffusion tensor imaging (DTI)”
  - “Practical diffusion tensor imaging of cervical spinal cord in routine clinical practice”
- June 18-23, 2009      15<sup>th</sup> Annual Meeting of the Organization for Human Brain Mapping, San Francisco, CA
- “The brain topography associated with high versus low contextual constraint in dominant temporal lobe resected patients: Potential reorganization of lexical access”
  - “Evidence for a frontal/subcortical network in the sequencing of non-motor/non-verbal dimensional information”
- June 28-  
July 1, 2009      6<sup>th</sup> IEEE International Symposium on Biomedical Imaging: From Nano to Macro 2009, Boston, MA
- “Human optic nerve DTI with EPI geometric distortion”

## **DAVID LEVIN, M.D.**

- October 2, 2008      Visiting Professor, Johns Hopkins Medical Institutions, Baltimore, MD
- “Clinical and pathophysiological aspects of coronary artery disease: A coronary CTA perspective”
  - “Self-referral in imaging: Impact on utilization and costs (the good, the bad, and the ugly)” (The Bearman Family Lecturer)
- October 21, 2008      2<sup>nd</sup> Annual Diagnostic Imaging Institute, Washington G-2 Reports, Arlington, VA
- “Trends in managed care: Utilization and payment”
- October 22-26, 2008      23<sup>rd</sup> Annual Economics of Diagnostic Imaging 2008: National Symposium, Arlington, VA
- “Recent developments in the battle against self-referral”
  - “Management challenges facing academic and community hospital radiology departments”
  - “The practice of radiology by nonradiologists: What are the implications for quality?”

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| November 30-<br>December 5, 2008 | <p>94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL</p> <ul style="list-style-type: none"> <li>• “Accuracy of coronary CT angiography in determining degree of stenosis caused by calcified coronary artery plaques”</li> <li>• “Utilization trends in radionuclide myocardial perfusion imaging in recent years among radiologists and cardiologists: Is self-referral an issue?”</li> <li>• “Endovascular stent grafts versus open surgical repair of abdominal aortic aneurysms: Comparative utilization trends from 2001 to 2006”</li> <li>• “Biopsies of liver, pancreatic, and other abdominal masses by radiologists, surgeons, and other specialists: Recent utilization trends and market shares”</li> <li>• “Recent utilization trends and practice patterns in treatment of peripheral arterial disease: The roles of radiologists, surgeons, and cardiologists”</li> <li>• “Radiology by nonradiologists: Problems and solutions to turf battles”</li> </ul> |
| May 8, 2009                      | <p>The Bruce J. Hillman Lecturer, University of Virginia School of Medicine, Charlottesville, VA</p> <ul style="list-style-type: none"> <li>• “Clinical aspects and pathophysiology of coronary artery disease as reflected on coronary CT angiography”</li> </ul>   |
| May 9, 2009                      | <p>The Theodore Keats Lecturer, University of Virginia School of Medicine, Charlottesville, VA</p> <ul style="list-style-type: none"> <li>• “The appropriateness or inappropriateness of self-referred diagnostic imaging: What does the evidence show?”</li> </ul>  |

**JI-BIN LIU, M.D.**

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| October 4, 2008  | <p>Ultrasound and Vascular Symposium, Wenzhou, China</p> <ul style="list-style-type: none"> <li>• “Contrast-enhanced lymphonography: Update”</li> </ul>  |
| October 28, 2008 | <p>Ultrasound Symposium, Huaxi Hospital, Chengdu, China</p> <ul style="list-style-type: none"> <li>• “Intraoperative ultrasound: Present and future”</li> </ul>  |
| November 1, 2008 | <p>2008 Advanced Ultrasound and Vascular Ultrasound Credentialing Symposium, Beijing, China</p> <ul style="list-style-type: none"> <li>• “Ultrasound education and workflow in the USA”</li> </ul>   |
| November 5, 2008 | <p>Ultrasound Conference of the Erdos Central Hospital, Erdos, China</p> <ul style="list-style-type: none"> <li>• “Interventional ultrasound”</li> </ul>   |
| November 7, 2008 | <p>Visiting Professor, PKU Shenzhen Hospital, Shenzhen, China</p> <ul style="list-style-type: none"> <li>• “Contrast ultrasound imaging for interventional applications”</li> </ul>  |
| November 8, 2008 | <p>The 5<sup>th</sup> National Ultrasound Symposium on Organ Transplantation and New Advances, Guangzhou, China</p> <ul style="list-style-type: none"> <li>• “Intraoperative and interventional ultrasound: Present and future”</li> </ul> |

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| February 24, 2009 | <p>The Drexel-Jefferson Academic Alliance Course for Biomedical Engineering, Philadelphia, PA</p> <ul style="list-style-type: none"> <li>• “Interventional ultrasound: A review”</li> <li>• “Laparoscopic ultrasound”</li> </ul>                          |
| March 25, 2009    | <p>Visiting Professor, Temple University Kornberg School of Dentistry, Philadelphia, PA</p> <ul style="list-style-type: none"> <li>• “Ultrasonographic features of ameloblastoma: A preliminary study”</li> </ul>   |
| April 11, 2009    | <p>3<sup>rd</sup> Symposium on Vascular and Superficial Ultrasound and Standing Committee Meeting of Chinese Ultrasound Doctor Association, Suzhou, China</p> <ul style="list-style-type: none"> <li>• “Breast ultrasound: Present and future”</li> </ul> |
| April 14, 2009    | <p>5<sup>th</sup> Five-Continent International Symposium on Cardiovascular Diseases, Beijing, China</p> <ul style="list-style-type: none"> <li>• “2D and 3D intravascular ultrasound”</li> </ul>  |
| June 25-28, 2009  | <p>World Conference on Interventional Oncology 2009, Beijing, China</p> <ul style="list-style-type: none"> <li>• “RF Ablation of prostate cancer: Guided and monitored by contrast ultrasound imaging”</li> </ul>   |

### **JEFFREY MCCANN, M.D.**

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| March 7-12, 2009 | <p>34<sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology, San Diego, CA</p> <ul style="list-style-type: none"> <li>• “The use of n-Butyl-2-Cyanoacrylate (n-BCA) as an adjunct to sclerotherapy for treatment of venous malformations – A retrospective review” (exhibit)</li> <li>• “The safety and efficacy of venous outflow occlusion in patients with pelvic arteriovenous malformations” (poster)</li> <li>• “Lower extremity venography in patients with venous malformations using a moving table top technique – Efficacy, technique and imaging findings” (poster)</li> </ul> |
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### **CHRISTOPHER MERRITT, M.D.**

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| November 1-4, 2008 | <p>Turkish Society of Radiology Annual Scientific Meeting, Antalya, Turkey</p> <ul style="list-style-type: none"> <li>• “Ultrasound in the emergency department”</li> <li>• “Past, present, and future of ultrasound”</li> <li>• “Understanding imaging”</li> <li>• “Ultrasound of the upper extremity veins”</li> </ul> |
| January 23, 2009   | <p>Department of Radiology Grand Rounds, Georgetown University, Washington, DC</p> <ul style="list-style-type: none"> <li>• “Ultrasound – Past, present, and future”</li> </ul>  |



- April 26-  
May 1, 2009 American Roentgen Ray Society 109<sup>th</sup> Annual Meeting,  
Boston, MA
- “Waveform analysis – What you need to know”
- May 19-22, 2009 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas  
Jefferson University Hospital, Atlantic City, NJ
- “Breast ultrasound – Physics”
  - “Breast ultrasound – BIRADS”
  - “The requisites – Understanding Doppler”
  - “Vascular ultrasound – Traumatic injuries, diagnosis and  
treatment”
  - “Vascular ultrasound – Interesting cases”
  - “CT and US in the emergency department”

### **DONALD MITCHELL, M.D.**

- August 2-3, 2008: International Society for Magnetic Resonance in Medicine Premier  
Educational Event, Practical Body MRI by the Experts, Berkeley,  
CA
- “Diffuse liver disease”
  - “Pancreatic cystic masses”
- April 18-24, 2009 International Society for Magnetic Resonance in Medicine 17<sup>th</sup>  
Annual Scientific Meeting and Exhibition, Honolulu, HI
- “Focal lesions in cirrhotic liver”
  - “MRI techniques for evaluating focal liver lesions”
- June 10, 2009 Philadelphia Hepatoma Symposium, sponsored by the Kimmel  
Cancer Center at Thomas Jefferson University, Abramson Cancer  
Center at the University of Pennsylvania, and Fox Chase Cancer  
Center, Philadelphia, PA
- “Imaging studies of HCC”

### **WILLIAM MORRISON, M.D.**

- August 24-27, 2008 17<sup>th</sup> Annual Current Issues of Magnetic Resonance Imaging in  
Orthopaedics and Sports Medicine, San Francisco, CA
- “Lower extremity osteomyelitis”
  - “MRI ankle and foot” (panel discussion)
  - “How I do it: Elbow MRI”
  - “How I do it: Hip MRI”
- September 17, 2008 Visiting Professor, Department of Radiology Pennsylvania Hospital,  
Philadelphia, PA
- “MRI of the knee mensici: Tricks and tips”
  - “MRI of shoulder impingement and the rotator cuff”
  - “Case review”

October 1, 2008	Regional Diagnostic Imaging at South Jersey Hospital Continuing Medical Education Conference, Vineland, NJ <ul style="list-style-type: none"> <li>• “MRI of the diabetic foot”</li> </ul>
October 18-19, 2008	Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Imaging of the forefoot: Athletic and diabetic”</li> <li>• “Imaging of shoulder instability”</li> <li>• “Imaging of the acromioclavicular and sternoclavicular joint”</li> <li>• “Knee menisci and cartilage: From 0.3T to 3T”</li> </ul>
October 29- November 1, 2008	International Skeletal Society Annual Meeting and Refresher Courses, New Delhi, India <ul style="list-style-type: none"> <li>• “MR imaging of the diabetic foot”</li> </ul>
November 12, 2008	Visiting Professor, Hong Kong College of Radiologists, Hong Kong, China <ul style="list-style-type: none"> <li>• “MRI of sports injuries in the high performance athlete”</li> </ul>
November 12-14, 2008	Visiting Professor, Hong Kong Society of Diagnostic Radiologists, Hong Kong, China <ul style="list-style-type: none"> <li>• “Multidetector CT of the musculoskeletal system”</li> <li>• “MRI of the knee menisci: Tricks and tips”</li> <li>• “MRI of the knee ligaments”</li> <li>• “MRI of the shoulder, impingement and the rotator cuff”</li> <li>• “Imaging of shoulder instability”</li> <li>• “MRI of the wrist and hands”</li> <li>• “Imaging of adult hip dysplasia and femoral acetabular impingement”</li> <li>• “MRI of the ankle”</li> </ul>
November 30- December 5, 2008	94 <sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none"> <li>• “Indirect MR arthrography and CT arthrography” (refresher course)</li> </ul>
February 10, 2009	Department of Radiology Grand Rounds, Hospital of the University of Pennsylvania, Philadelphia, PA <ul style="list-style-type: none"> <li>• “MRI of the hip: Femoral-acetabular impingement and dysplasia”</li> <li>• “Boards review”</li> </ul>
February 18, 2009	Visiting Professor, Armed Forces Institute of Pathology, Washington, DC <ul style="list-style-type: none"> <li>• “MR imaging of the elbow”</li> </ul>
March 8-11, 2009	Society of Skeletal Radiology 2009 Annual Meeting, Isle of Palms, SC <ul style="list-style-type: none"> <li>• “Shoulder, hip and knee arthrography using fluoroscopic guidance: Practice patterns of musculoskeletal radiologists in North America”</li> </ul>

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| April 18-24, 2009        | International Society for Magnetic Resonance in Medicine 17 <sup>th</sup> Annual Scientific Meeting and Exhibition, Honolulu, HI <ul style="list-style-type: none"> <li>• “Imaging of the lower extremity: From basics to advanced techniques”</li> <li>• “MRI of the forefoot”</li> </ul>   |
| April 26-<br>May 1, 2009 | American Roentgen Ray Society 109 <sup>th</sup> Annual Meeting, Boston, MA <ul style="list-style-type: none"> <li>• “Hip imaging and sports hernia” (instructional course)</li> </ul>  |
| May 2, 2009              | American College of Radiology Categorical Course, Washington, DC <ul style="list-style-type: none"> <li>• “MR imaging of the hip”</li> <li>• “MR imaging of the ankle”</li> </ul>  |
| May 7, 2009              | Visiting Professor, Armed Forces Institute of Pathology, Washington, DC <ul style="list-style-type: none"> <li>• “MR imaging of the elbow”</li> </ul>  |
| May 20, 2009             | Cooper Hospital Groin Injury Symposium, Camden, NJ <ul style="list-style-type: none"> <li>• “MR imaging of athletic pubalgia”</li> </ul>   |
| June 13-14, 2009         | Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"> <li>• “SL and LT injuries and their sequelae”</li> <li>• “MR imaging of the finger”</li> <li>• “How the experts interpret the hand/wrist and ankle/foot”</li> <li>• “Posterior tibialis tendon disease and dysfunction”</li> <li>• “Osseous pathology of the mid and forefoot”</li> </ul> |

### **LEVON N. NAZARIAN, M.D.**

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| July 10-12, 2008    | Hands-on Musculoskeletal Ultrasound: Diagnostic and Interventional Techniques, Rochester, MN <ul style="list-style-type: none"> <li>• “General applications of musculoskeletal ultrasound”</li> <li>• “Ultrasound-guided elbow procedures”</li> <li>• “Common foot and ankle disorders”</li> <li>• “Ultrasound-guided foot and ankle procedures”</li> </ul>  |
| August 10, 2008     | Update in Musculoskeletal Ultrasound, CT Radiology Complex, Bayamon, Puerto Rico <ul style="list-style-type: none"> <li>• “General concepts of musculoskeletal ultrasound”</li> <li>• “Ultrasound of the shoulder”</li> <li>• “Ultrasound of the elbow”</li> <li>• “Ultrasound of the hand and wrist”</li> <li>• “Ultrasound of the hip and knee”</li> <li>• “Ultrasound of the foot and ankle”</li> </ul> |
| October 24-26, 2008 | 18 <sup>th</sup> Annual Meeting of the Society of Radiologists in Ultrasound, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Ultrasound-guided minimally invasive musculoskeletal surgery”</li> <li>• “Teaching ultrasound: Are we sleeping with the enemy?” (panel discussion)</li> </ul>   |

November 30- December 5, 2008	<p>94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL</p> <ul style="list-style-type: none"> <li>• “Turf issues in musculoskeletal ultrasound” (special focus session)</li> </ul>
December 8, 2008	<p>Visiting Professor, New York Roentgen Society, New York, NY</p> <ul style="list-style-type: none"> <li>• “Musculoskeletal ultrasound imaging”</li> </ul>
February 6-7, 2009	<p>Andrews Institute Sports Musculoskeletal Ultrasound Course, Pensacola, FL</p> <ul style="list-style-type: none"> <li>• “Shoulder therapeutics”</li> <li>• “Knee ultrasound exam”</li> <li>• “Professional sports injuries – MSK ultrasound experience”</li> <li>• “Elbow therapeutics”</li> <li>• “Soft tissue pathology”</li> </ul>
February 18, 2009	<p>Visiting Professor, Indiana University Department of Radiology, Indianapolis, IN</p> <ul style="list-style-type: none"> <li>• “Introduction to musculoskeletal ultrasound”</li> <li>• “Ultrasound case presentation”</li> <li>• “Ultrasound-guided musculoskeletal interventions”</li> </ul>
March 3-6, 2009	<p>36<sup>th</sup> Annual Course in Electrodiagnostic Medicine, sponsored by Jefferson Medical College, Philadelphia, PA</p> <ul style="list-style-type: none"> <li>• “Ultrasound diagnosis of neuromuscular disease”</li> </ul>
March 28, 2009	<p>Department of Physical Medicine and Rehabilitation Grand Rounds, Hospital of the University of Pennsylvania, Philadelphia, PA</p> <ul style="list-style-type: none"> <li>• “Introduction to musculoskeletal ultrasound”</li> </ul>
April 2-5, 2009	<p>2009 American Institute of Ultrasound in Medicine Annual Convention, New York, NY</p> <ul style="list-style-type: none"> <li>• “Interventional musculoskeletal ultrasound” (moderator)</li> <li>• “Peripheral nerve ultrasound” (hands-on faculty)</li> </ul>
April 26- May 1, 2009	<p>American Roentgen Ray Society 109<sup>th</sup> Annual Meeting, Boston, MA</p> <ul style="list-style-type: none"> <li>• “Ultrasound turf issues”</li> <li>• “Overview of musculoskeletal sonography”</li> </ul>
May 19-22, 2009	<p>The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ</p> <ul style="list-style-type: none"> <li>• “Musculoskeletal ultrasound” (course director)</li> <li>• “Introduction to musculoskeletal ultrasound”</li> <li>• “Ultrasound of the shoulder: Pathology”</li> <li>• “Ultrasound of soft tissue masses”</li> <li>• “Ultrasound of the foot and ankle”</li> <li>• “Interventional musculoskeletal ultrasound”</li> <li>• “Color Doppler in musculoskeletal ultrasound”</li> <li>• “Musculoskeletal ultrasound: The requisites”</li> </ul>

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| June 5, 2009     | Pennsylvania Academy of Physical Medicine and Rehabilitation<br>Annual Meeting, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Ultrasound-guided musculoskeletal interventions”</li> </ul> |
| June 13-14, 2009 | Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Ultrasound evaluation of the ankle”</li> </ul>   |

**LAURENCE NEEDLEMAN, M.D.**

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| October 15-19, 2008  | 2008 Society of Diagnostic Medical Sonographers Annual<br>Conference, Mashantucket, CT <ul style="list-style-type: none"> <li>• “Role of sonography in evaluation of portal hypertension”</li> <li>• “Tibial veins: How to scan, how many, how come”</li> </ul>  |
| October 24-26, 2008  | 18 <sup>th</sup> Annual Meeting of the Society of Radiologists in Ultrasound,<br>Philadelphia, PA <ul style="list-style-type: none"> <li>• “Case-based lessons in ultrasound” (moderator)</li> <li>• “Potpourri”</li> </ul>  |
| November 14-16, 2008 | 93 <sup>rd</sup> Annual Meeting of the Pennsylvania Radiological Society,<br>Philadelphia, PA <ul style="list-style-type: none"> <li>• “How to deal with IV contrast emergencies”</li> </ul>   |
| November 21-22, 2008 | Advances in Vascular Imaging and Diagnosis, 19 <sup>th</sup> Symposium and<br>Workshops on Management and Clinical Issues, sponsored by the<br>Cleveland Clinic, New York, NY <ul style="list-style-type: none"> <li>• “Managing the grid: Practical tips and guidelines for<br/>             evaluating your laboratory”</li> <li>• “How best to image the renal arteries: CT, MRA or Duplex<br/>             ultrasound: Competing or complementary modalities”</li> <li>• “Lessons learned from unusual findings and interesting cases”</li> </ul>  |
| February 26-28, 2009 | Noninvasive Diagnosis of Vascular Disease, 16 <sup>th</sup> National Symposium,<br>sponsored by Mercy St. John’s Medical Center, St. Louis, MO <ul style="list-style-type: none"> <li>• “Correlating noninvasive tests for carotid disease: US, CTA,<br/>             MRA”</li> <li>• “Panel discussion”</li> <li>• “Quality improvement in the vascular lab”</li> </ul>   |
| March 6-8, 2009      | Registered Physician in Vascular Interpretation Exam Review Course,<br>sponsored by the University of Cincinnati and Society for Vascular<br>Ultrasound, Pittsburgh, PA <ul style="list-style-type: none"> <li>• “Interpretation guidelines: Extracranial cerebrovascular”</li> <li>• “Case interpretation: Carotid Duplex”</li> <li>• “Interpretation guidelines: Native peripheral arterial Duplex: Pre<br/>             and post intervention”</li> <li>• “Interpretation guidelines: Graft surveillance”</li> <li>• “Case interpretation: Arterial Duplex”</li> <li>• “Interpretation guidelines: Venous Duplex, lower and upper<br/>             extremity”</li> <li>• “Case interpretation: Venous Duplex”</li> <li>• “Test your knowledge”</li> </ul> |

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| March 21-22, 2009        | 18 <sup>th</sup> Annual Clinical Utilization of Color Doppler Ultrasound Seminar,<br>Medical Technology Management Institute, Chicago, IL <ul style="list-style-type: none"> <li>• “Carotid arteries: Plaque, stenosis and stents”</li> <li>• “Quality assurance step by step”</li> <li>• “Lower extremity veins and DVT”</li> <li>• “Doppler jeopardy”</li> <li>• “Carotid demonstration”</li> </ul> |
| April 16-19, 2009        | Ultrasound/Women’s Imaging, sponsored by Harvard University, Boston,<br>MA <ul style="list-style-type: none"> <li>• “Hepatic Doppler”</li> <li>• “Renal Doppler”</li> <li>• “Carotid ultrasound and Doppler”</li> </ul>   |
| April 26-<br>May 1, 2009 | American Roentgen Ray Society 109 <sup>th</sup> Annual Meeting,<br>Boston, MA <ul style="list-style-type: none"> <li>• “Ultrasound in the diagnosis of lower extremity venous disease:<br/>2009 update”</li> </ul>  |
| May 19-22, 2009          | The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas<br>Jefferson University Hospital, Atlantic City, NJ <ul style="list-style-type: none"> <li>• “Evidence based venous disease”</li> <li>• “Venous disease panel discussion”</li> <li>• “Cerebrovascular ultrasound interpretation”</li> <li>• “Case analysis”</li> <li>• “Requisites: Vascular (arterial and venous)”</li> </ul>         |

### **LAURENCE PARKER, PH.D.**

- |                                  |   |
|----------------------------------|---|
| November 30-<br>December 5, 2008 | 94 <sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological<br>Society of North America, Chicago, IL <ul style="list-style-type: none"> <li>• “Radionuclide myocardial perfusion imaging: Enormous<br/>variation across states in the Medicare population”</li> </ul> |
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### **VIJAY RAO, M.D.**

- |                       |   |
|-----------------------|---|
| September 10-14, 2008 | 42 <sup>nd</sup> Annual Meeting of the American Society of Head and Neck<br>Radiology, Toronto, CA <ul style="list-style-type: none"> <li>• “Petrous apex”</li> </ul>   |
| November 17, 2008     | Visiting Professor, Department of Radiology, Hahnemann<br>University Hospital, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Imaging of neck spaces and masses”</li> </ul>   |
| February 17, 2009     | Department of Radiology Grand Rounds, Hospital of the University<br>of Pennsylvania, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Imaging utilization trends: What are the payers doing to<br/>control utilization?”</li> </ul> |

- November 30-  
December 5, 2008
- 94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- “Sinonasal infections and chronic inflammatory disease” (refresher course)
  - “Radiology by nonradiologists: Problems and solutions to turf battles” (refresher course)
  - “Changes in utilization rates of the different imaging modalities in emergency departments between 1996 to 2006”
  - “Geographic variations throughout the United States in utilization of noninvasive diagnostic imaging (NDI)”

### **CHRISTOPHER ROTH, M.D.**

- November 30-  
December 5, 2008
- 94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- “MRI of hepatobiliary and pancreatic autoimmune diseases”
  - “Optimizing abdominal MR images and avoiding artifacts”

### **DINESH SHARMA, M.D.**

- October 31-  
November 4, 2008
- 9<sup>th</sup> Asia Oceania Congress of Nuclear Medicine and Biology, New Delhi, India
- “Normal and abnormal CT of head and neck” (categorical seminar)

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

- May 16-21, 2009
- American Society of Neuroradiology 47<sup>th</sup> Annual Meeting and NER Foundation Symposium 2009, Vancouver, BC, Canada
- “Intracranial imaging manifestations of acute cocaine including patterns of acute toxic encephalopathy”

### **MATHEW THAKUR, PH.D**

- October 28-30, 2008
- First International Symposium on Radiopharmaceutical Therapy, Goa, India
- “Lipid soluble radioactive agents for intratumoral therapy”
  - “Approaches to stem cell therapy”
- October 31-  
November 4, 2008
- 9<sup>th</sup> Asia Oceania Congress of Nuclear Medicine and Biology, New Delhi, India
- “PNA based radiopharmaceuticals for targeted therapy”
  - “Imaging infection and inflammation”
  - “Radionuclides in therapy. Critical evaluation”
- December 11, 2008
- Visiting Professor, Trace Life Sciences, Dallas TX
- “Cu-64- biomolecules for diagnosis and therapy”

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|------------------|--|
| March 4, 2009    | Visiting Professor, Department of Radiology, Hospital of the University of Pennsylvania, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Mechanism of radiopharmaceutical uptake”</li> </ul>  |
| March 9-11, 2009 | International Symposium on Molecular Imaging & Therapy: Road Map to Modern Medicine, Jabriya, Kuwait University <ul style="list-style-type: none"> <li>• “Genomic biomarkers for molecular imaging”</li> <li>• “Therapeutic radiopharmaceuticals”</li> </ul> |
| April 24, 2009   | North Central Chapter of the American Association of Physicists in Medicine Spring Annual Meeting, Philadelphia, PA <ul style="list-style-type: none"> <li>• “Molecular imaging of breast cancer”</li> </ul>   |
| June 13-17, 2009 | Society of Nuclear Medicine 56 <sup>th</sup> Annual Meeting, Toronto, Ontario, Canada <ul style="list-style-type: none"> <li>• “PET imaging of spontaneous mouse mammary tumor virus (MMTV) infected breast cancer (BC) using Cu-64-TP3805”</li> </ul>       |

### **ANNINA WILKES, M.D.**

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|-------------------|---|
| March 11-13, 2009 | “Assessment of the Clinical Benefit of SuperSonic Shear Wave Elastography in the Ultrasonic Evaluation of Breast Lesions”, SuperSonic Imagine Investigators Meeting, Aix en Provence, France <ul style="list-style-type: none"> <li>• “Supersonic imagine report of preliminary results from TJUH”</li> </ul>   |
| May 19-22, 2009   | The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ <ul style="list-style-type: none"> <li>• “Sonomammography tutorial” (course director)</li> <li>• “Breast ultrasound – Normal anatomy and scanning techniques”</li> <li>• “Hands-on instruction: Breast ultrasound, ultrasound guided biopsy”</li> </ul> |

### **SHAOXIONG ZHANG, M.D., PH.D.**

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|--------------------------|---|
| April 26-<br>May 1, 2009 | American Roentgen Ray Society 109 <sup>th</sup> Annual Meeting, Boston, MA <ul style="list-style-type: none"> <li>• “Automated diagnosis of stenosis on coronary CT angiography”</li> </ul> |
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### **ADAM ZOGA, M.D.**

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|--------------------|---|
| August 24-27, 2008 | 17 <sup>th</sup> Annual Current Issues of Magnetic Resonance Imaging in Orthopaedics and Sports Medicine, San Francisco, CA <ul style="list-style-type: none"> <li>• “MRI of the sports hernia”</li> <li>• “MRI of the hip” (panel discussion)</li> </ul> |
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September 5, 2008	<p>Department of Radiology Grand Rounds, Newport Hospital, Newport, RI</p> <ul style="list-style-type: none"> <li>• “The use of MRI in the evaluation of arthritis (inflammatory arthritides)”</li> </ul>
October 1, 2008	<p>Musculoskeletal Imaging Conference, sponsored by Regional Diagnostic Imaging at South Jersey Healthcare, Vineland, NJ</p> <ul style="list-style-type: none"> <li>• “Imaging of hip disorders and evaluation of athletic groin injuries”</li> </ul>
October 27-31, 2008	<p>National Meeting of the Mexican Federation of Radiology and Imaging, Guadalajara, Mexico</p> <ul style="list-style-type: none"> <li>• “Multimodality imaging of shoulder impingement”</li> <li>• “Differentiating labral lesions of the shoulder”</li> <li>• “MR of the ankle with a sprinkle of US and CT”</li> <li>• “Hip pain in the young adult”</li> <li>• “Pre &amp; post op of the cruciate ligament”</li> </ul>
November 30- December 5, 2008	<p>94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL</p> <ul style="list-style-type: none"> <li>• “Imaging hip and groin pain: From femoral acetabular impingement to athletic pubalgia”</li> </ul>
April 1, 2009	<p>Visiting Professor, Department of Radiology, Geisinger Health System, Danville, PA</p> <ul style="list-style-type: none"> <li>• “Imaging of arthritis”</li> <li>• “Imaging hip and groin pain in the young adult”</li> </ul>
April 26- May 1, 2009	<p>American Roentgen Ray Society 109<sup>th</sup> Annual Meeting, Boston, MA</p> <ul style="list-style-type: none"> <li>• “MRI technique and findings in athletic pubalgia and the ‘sports hernia’”</li> <li>• “Musculoskeletal (pelvis, hip and knee)” (scientific session moderator)</li> </ul>
May 7-8, 2009	<p>Advances in Foot &amp; Ankle Surgery General Principles, Jefferson Orthopaedic Society Annual Meeting, Philadelphia, PA</p> <ul style="list-style-type: none"> <li>• “Update on MRI of traumatic forefoot injury”</li> </ul>
June 13-14, 2009	<p>Jefferson Musculoskeletal Imaging Symposium, Philadelphia, PA</p> <ul style="list-style-type: none"> <li>• “Preventing NSF”</li> <li>• “MR imaging of ankle sprains”</li> <li>• “Lisfranc ligament injuries”</li> </ul>

## **APPENDIX III**

### **HONORS, EDITORIAL ACTIVITIES, SERVICE TO REGIONAL OR NATIONAL ORGANIZATIONS**

#### **OKSANA BALTAROWICH, M.D.**

- President Elect, Pennsylvania Chapter, Ukrainian Medical Association of North America
- Examiner, American Board of Radiology
- Member, Advisory Editorial Board, *Ukrainian Radiological Journal*

#### **DANIEL BROWN, M.D.**

- Chair, Professional Education Committee, *Society of Interventional Radiology*
- Member, Post-Graduate Education Executive Council, Society of Interventional Radiology
- Member, Interventional Radiology Appropriateness Panel, American College of Radiology
- Associate Editor, *Journal of Vascular and Interventional Radiology*
- Section Editor, *Interventional Oncology*
- Reviewer, *Cardiovascular and Interventional Radiology*
- Member, Scientific Program Committee, Vascular and Interventional Subcommittee, Radiologic Society of North America
- Reviewer, Scientific Abstracts, 94<sup>th</sup> Scientific Assembly and Annual Meeting, Radiological Society of North America
- Editor's Recognition Award for Distinction in Reviewing, *Journal of Vascular and Interventional Radiology*
- Named as one of the "Best Doctors in America 2009-2010", *Philadelphia Magazine*

#### **BARBARA CAVANAUGH, M.D.**

- Member, Subcommittee on Clinical Image Review, American College of Radiology
- Clinical Image Reviewer, Mammography Accreditation Program, American College of Radiology
- Clinical Image Reviewer, Stereotactic Breast Biopsy Accreditation Program, American College of Radiology

#### **SANDEEP DESHMUKH, M.D.**

- Member, Board of Directors, Pennsylvania Radiological Society
- Reviewer, *Journal of Magnetic Resonance Imaging*
- A. Edward O'Hara, M.D. Award for Excellence in Teaching, Department of Radiology, Thomas Jefferson University, 2009

#### **DAVID ESCHELMAN, M.D.**

- Member, Relative Value Update Advisory Committee, Society of Interventional Radiology

- Member, Editorial and Advisory Board, *Journal of Vascular and Interventional Radiology*
- Examiner, American Board of Radiology
- Reviewer, Scientific Abstracts, 34<sup>th</sup> Annual Scientific Meeting, Society of Interventional Radiology

### **RICK FELD, M.D.**

- Immediate Past President, Philadelphia Roentgen Ray Society
- Chair, Education Committee, Society of Radiologists in Ultrasound Radiology
- Member, Executive Council, Society of Radiologists in Ultrasound Radiology
- Member, Executive Board, Philadelphia Roentgen Ray Society
- Member, Board of Directors, Pennsylvania Radiological Society
- Member, Budget Committee, Pennsylvania Radiological Society
- Member, Program Committee, Pennsylvania Radiological Society
- Member, Nominating Committee, Pennsylvania Radiological Society
- Member, Education Program Committee, Philadelphia Roentgen Ray Society
- Alternate Councilor, Pennsylvania, American College of Radiology
- Associate Editor, *Journal of Ultrasound in Medicine*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Clinical Imaging*
- Reviewer, *International Journal of Clinical Practice*
- Reviewer, *Journal of American Medical Association*
- Reviewer, *Journal of Clinical Ultrasound*
- Reviewer, *Journal of Ultrasound in Medicine*
- Reviewer, *Journal of Vascular and Interventional Radiology*

### **ADAM FLANDERS, M.D.**

- Member-at-Large, American Society of Spine Radiology
- Chair, Research Committee, American Society of Spine Radiology
- Chair, Subcommittee for Digital Outreach, Informatics Committee, American College of Radiology
- Chair, Neuroradiology Subcommittee, Reporting Committee, Radiological Society of North America
- Chair, Electronic Education & eCME Subcommittee of Education, American Society of Neuroradiology
- Co-Chair, Medical Imaging Resource Center, Radiological Society of North America
- Treasurer, American Society of Spine Radiology
- Panel Participant, Stakeholders Meeting, 2009 Spinal Cord Injury Research Program, Department of Defense
- Member, Informatics Committee, American College of Radiology
- Member, Program Committee, Society for Imaging Informatics in Medicine
- Member, Clinical Practice Committee, American Society of Spine Radiology
- Guide/Exhibitor, National Youth Leadership Forum
- Grant Reviewer, Society Imaging Informatics in Medicine
- Associate Editor, Informatics (infoRAD), *Radiographics*
- Imaging Editor, *Yearbook in Ophthalmology*
- Reviewer, Scientific Abstracts, 94<sup>th</sup> Scientific Assembly and Annual Meeting, Radiological Society of North America

- Reviewer, Scientific Abstracts, 2009 Annual Symposium, American Society of Spine Radiology
- Reviewer, *American Journal of Neuroradiology*
- Reviewer, *Journal of Digital Imaging*
- Reviewer, *The New England Journal of Medicine*
- Reviewer, *Radiological Society of North America Electronic Journal*

### **FLEMMING FORSBERG, PH.D.**

- Member, Technical Standards Committee, *American Institute of Ultrasound in Medicine*
- Member, Advisory Editorial Board, *Ultrasound in Medicine and Biology*
- Member, Advisory Editorial Board, *Journal of Ultrasound in Medicine*
- Grant Reviewer, National Institutes of Health.
- Grant Reviewer, American Heart Association.
- Grant Reviewer, The Swedish Research Council
- Reviewer, *Acoustic Research Letters Online*
- Reviewer, *Circulation*
- Reviewer, *Journal of Ultrasound in Medicine*
- Reviewer, *IEEE Transactions on Ultrasonics, Ferroelectronics & Frequency Control*
- Reviewer, *IEEE Transactions on Medical Imaging*
- Reviewer, *International Journal of Cancer*
- Reviewer, *Medical Engineering & Physics*
- Reviewer, *Medical Physics*
- Reviewer, *Radiology*
- Reviewer, *Ultrasonic Imaging*
- Reviewer, *Ultrasound in Medicine and Biology*
- Reviewer, *Ultrasonics*
- Reviewer, *Veterinary Radiology & Ultrasound*

### **DAVID FRIEDMAN, M.D.**

- Editorial Board, *Current Problems in Diagnostic Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Journal of the American College of Radiology*

### **GEOFFREY GARDINER, JR., M.D.**

- Named as one of the “Best Doctors in America 2009-2010”, *Philadelphia Magazine*

### **ERIC GINGOLD, PH.D.**

- President-Elect, Delaware Valley Chapter, American Association of Physicists in Medicine
- Member, Radiography and Fluoroscopy Subcommittee, American Association of Physicists in Medicine
- Member, Limited Scope of Practice in Radiography Examination Committee, American Registry of Radiologic Technologists

- Member, Diagnostic Work and Workforce Study Subcommittee, American Association of Physicists in Medicine
- Member, Task Group 116, Exposure Indicator in Digital Radiography, American Association of Physicists in Medicine
- Member, Task Group 150, Acceptance Testing and Quality Control of Digital Radiograph Systems, American Association of Physicists in Medicine
- Member, Task Group 153, Digital Radiography Glossary, American Association of Physicists in Medicine
- Image Quality Phantom Reviewer, MRI Accreditation Program, American College of Radiography
- Image Quality Phantom Reviewer, Mammography Accreditation Program, American College of Radiology
- Associate Editor, *Medical Physics*
- Reviewer, *Medical Physics*
- Reviewer, *Radiology*

### **BARRY GOLDBERG, M.D.**

- 2008 Second Annual Distinguished Leadership Award, Society of Radiologists in Ultrasound
- Establishment of ACR Goldberg-Reeder International Travel Grant, American College of radiology
- President, Radiology Outreach Foundation
- Co-President, International Contrast Ultrasound Society
- Chairman, Archives Committee, American Institute of Ultrasound in Medicine
- Chairman, Archives Committee, World Federation for Ultrasound in Medicine and Biology
- Chairman, Committee on Ultrasound, American College of Radiology Imaging Network
- Chairman, Outstanding Researcher/Outstanding Educator Award Review Panel, Research and Education Foundation, Radiological Society of North America
- Chair, Education Committee, World Federation for Ultrasound in Medicine and Biology
- Chair, Ultrasound Working Group, American College of Radiology Imaging Network
- Councilor, World Federation for Ultrasound in Medicine and Biology
- Medical Advisor, Ultrasonic Procedures, Blue Shield of Pennsylvania
- Consultant, United States - Israel Binational Science Foundation
- Consultant, Ultrasound, Philadelphia Zoo, Philadelphia, Pennsylvania
- Professional Consultant, Medicare, Pennsylvania Blue Shield
- Medical Advisor, Ultrasound, World Health Organization
- Member, Administrative Council, World Federation for Ultrasound in Medicine and Biology
- Member, Awards Committee, American Institute of Ultrasound in Medicine
- Member, Public Information Advisory Board, Radiological Society of North America
- Member, Research and Education Fund Committee, American Institute of Ultrasound in Medicine
- Member, Global Steering Group for Education and Training in Diagnostic Imaging, World Health Organization
- Member, Outstanding Researcher Award Review Panel, Research and Education Foundation, Radiological Society of North America
- Member, Past Presidents Committee, American Institute of Ultrasound in Medicine
- Member, Outstanding Researcher/Outstanding Educator Award Review Panel, Research and Education Foundation, Radiological Society of North America
- Member, Public Information Advisors Network, Radiological Society of North America

- Member, Corporate Advisory Council, Radiological Society of North America
- Member, Presidential Advisory Council, American Institute of Ultrasound in Medicine
- Member, Education Council, Radiological Society of North America
- Member, Research and Education Foundation Program Committee, Radiological Society of North America
- Member, Endowment for Education and Research Committee, American Institute of Ultrasound in Medicine
- Member, Committee on International Service, American College of Radiology
- Member, Contrast Agents Panel, American Institute of Ultrasound in Medicine
- Member, Future of Ultrasound in Radiology Advisory Committee, Society of Radiologists in Ultrasound
- Member, Advisory Committee on Ultrasound in Developing Countries, Society of Radiologists in Ultrasound
- Member Fellows Selections Subcommittee for “Clinical Practice”, American Institute For Medical and Biological Engineering
- Representative, Management of Adnexal Masses Technical Expert, American College of Radiology
- Member, Corporate Affairs Committee, Society of Radiologists in Ultrasound
- Member, Foundation International Outreach Committee, American College of Radiology
- Ultrasonography Coordinator, Topics in Radiology, *Journal of American Medical Association*
- Member, Advisory Committee, *Ultrasonidos en Medicina*
- Associate Editor, *Journal of Ultrasound in Medicine*
- Associate Editor, *Surgical Endoscopy, Ultrasound, and Interventional Techniques*
- Editorial Advisor, *Journal d'Echographie et de Medecine par Ultrasons*
- Editorial Consultant, *Applied Radiology*
- Editorial Consultant, *Chest*
- Editorial Consultant, *Medcom Faculty of Medicine*
- Editorial Consultant, *Pediatrics*
- Member, International Liaison Committee, *Ultrasound in Medicine and Biology*
- Member, Advisory Editorial Board, *Ultrasound in Medicine and Biology*
- Member, Editorial Board, *Advances in Echo Enhancement*
- Member, Editorial Board, *Archives of Clinical Imaging*
- Member, Editorial Board, *Journal d'Echographie et de Medicine Ultrasonore*
- Member, Editorial Board, *Journal of Clinical Ultrasound in Medicine*
- Member, Editorial Board, *Journal of Ultrasound in Medicine*
- Member, Editorial Board, *Ultrasound International Journal*
- Member, Editorial Board, *Archives in Clinical Imaging*
- Member, Editorial Board, *Clinics in Diagnostic Ultrasound*
- Member, Editorial Board, *Journal of Surgical Ultrasonology*
- Member, Editorial Board, *Journal of Ultrasound in Medicine and Biology*
- Member, Editorial Board, *Radiologia*
- Member, Editorial Board, *Ultrasound International*
- Member, Editorial Board Committee, *Acta Clinica Croatica*
- Member, Editorial Committee, *Journal Ultrasonido*
- Overseas Editorial Adviser, *Borno Medical Journal*
- Member, Editorial Advisory Board, *West African Journal of Ultrasound*
- Member, International Advisory Editorial Board, *Hungarian Radiology*
- Member, International Editorial Board, *Giornale Italiano di Ecografia Journal*
- Member, International Editorial Board, *Brazilian Radiology Journal*
- Member, International Consultant Committee, *Revista Argentina de Radiologia*
- Member, International Advisory Board, *Indian Journal of Medical Ultrasound*

- Member, International Advisory Board, *Turkish Journal of Diagnostic and Interventional Radiology*
- Expert Panelist, 2008-2009 Edition of AuntMinnies.com
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Cancer*
- Reviewer, *Gastroenterology*
- Reviewer, *Gastrointestinal Endoscopy*
- Reviewer, *Health Devices*
- Reviewer, *Journal of the National Cancer Institute*
- Reviewer, *The New England Journal of Medicine*
- Reviewer, *Radiology*

### **CARIN GONSALVES, M.D.**

- Reviewer, *Journal of Vascular and Interventional Radiology*

### **ETHAN HALPERN, M.D.**

- Member, Prostate Cancer Imaging Working Group, National Cancer Institute, national Institutes of Health
- Member, Task Force to Update Guidelines for Prostate Sonography, American College of Radiology
- Member, Ultrasound Committee, American College of Radiology Imaging Network
- Member, Public Information Advisors Network, Radiological Society of North America
- Reviewer, *Academic Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Annals of Internal Medicine*
- Reviewer, *Radiology*
- Editors Certificate of Recognition, Review Special Distinction, *Radiology*
- CT NetForum Publication of the Year, Philips Medical Systems, 2008

### **CHARLES INTENZO, M.D.**

- Member, Academic Council, Society of Nuclear Medicine
- Member, Oncology Council, Society of Nuclear Medicine
- Member, Therapy Council, Society of Nuclear Medicine
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Radiology*
- Reviewer, *Radiographics*

### **DAVID KARASICK, M.D.**

- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Radiology*
- Reviewer, *Radiographics*

### **SUNG KIM, M.D.**

- Member, Executive Council, Program Development Education Funding, Society of Nuclear Medicine
- Member, Computer and Instrument Council, Society of Nuclear Medicine
- Member, Brain Imaging Council, Society of Nuclear Medicine
- Member, Correlative Imaging Council, Society Nuclear Medicine
- Member, Membership Committee, Society of Nuclear Medicine
- Reviewer, Nuclear Medicine Subcommittee, Education Exhibit Committee, Radiological Society of North America
- Reviewer, *Journal of Nuclear Medicine*

### **ALFRED KURTZ, M.D.**

- William J. Fry Lecturer, American Institute of Ultrasound in Medicine
- Mary S. Fisher Outstanding Educator Award, Philadelphia Roentgen Ray Society
- Member, Editorial Advisory Board, *Diagnostico Journal*
- Reviewer, *Radiographics*

### **SONG LAI, PH.D.**

- Grant Reviewer, Brain Disorders and Clinical Neuroscience Study Section, National Institutes of Health
- Grant Reviewer, Development of Methods for in vivo Imaging and Bioengineering Research Study Section, National Institutes of Health
- Grant Reviewer, National Sciences and Engineering Research Council of Canada
- Reviewer, *Human Brain Mapping*
- Reviewer, *IEEE Transactions on Medical Imaging*
- Reviewer, *Journal of Magnetic Resonance Imaging*
- Reviewer, *Magnetic Resonance Imaging*
- Reviewer, *Magnetic Resonance in Medicine*
- Reviewer, *Magnetic Resonance Materials in Biology, Physics and Medicine*
- Reviewer, *Medical Physics*
- Reviewer, *NMR in Biomedicine*
- Reviewer, *NeuroImage*
- Reviewer, *Pediatric Research*
- Reviewer, *Stroke*

### **DAVID LEVIN, M.D.**

- Gold Medalist, Association of University Radiologists
- Bearman Family Lecturer, Johns Hopkins Medical Institutions
- Bruce Hillman Lecturer, University of Virginia
- Theodore Keats Lecturer, University of Virginia
- Co-Chair, Expert Panel on Outpatient Imaging Efficiency, National Quality Forum
- Co-Chair, Future Trends Committee, American College of Radiology
- Member, Committee on Radiologist Resources, American College of Radiology
- Member, Media Spokesperson Group, American College of Radiology
- Member, Task Force on Imaging, Pennsylvania Medical Society



- Editorial Board, *Journal of the American College of Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Radiology*

### **JI-BIN LIU, M.D.**

- Contribution Award, Chinese Ultrasound Doctor Association, 2009
- Member, Medical Advisory Board, International Certification and Education Accreditation Foundation
- Member, Editorial Board, *Chinese Journal of Medical Imaging Technology*
- Member, Editorial Board, *Journal of Ultrasound in Clinical Medicine*
- Grant Reviewer, National Natural Science Foundation of China
- Reviewer, *Chinese Journal of Ultrasonography*
- Reviewer, *Journal of Clinical Ultrasound*
- Reviewer, *Journal of Ultrasound in Medicine*
- Reviewer, *Ultrasonics*
- Reviewer, *Ultrasound in Medicine and Biology*

### **JEFFREY MCCANN, M.D.**

- Reviewer, *Journal of Vascular and Interventional Radiology*

### **CHRISTOPHER MERRITT, M.D.**

- Hadi Özer Gold Medal Lecturer, Turkish Radiology Society
- Member, Strategic Planning Committee, College of Physicians
- Member, Committee on Administration, College of Physicians
- Member, Ultrasound Curriculum Committee, Society of Radiologists in Ultrasound
- Contributing Editor, *Breast Diseases Quarterly*
- Advisory Editor, *Ultrasound in Medicine and Biology*
- Advisory Editor, *Ultrasound Quarterly*
- Member, International Advisory Board, *Turkish Journal of Diagnostic and Interventional Radiology*
- Reviewer, *Academic Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Radiology*

### **DONALD MITCHELL, M.D.**

- Chair, Abdominal Subcommittee, Structured Reporting Committee, Radiological Society of North America
- Chair, MRI Committee, RADLEX
- Member, Committee on Clinical Growth, International Society for Magnetic Resonance in Medicine
- Managing Editor, MRI Teaching File Resident and Fellow Section, American College of Radiology
- Associate Editor, *Journal of Magnetic Resonance Imaging*
- Member, Editorial Board, *Abdominal Imaging*

- Member, Editorial Board, *Radiology*
- Reviewer, *Academic Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Investigational Radiology*
- Reviewer, *Radiographics*

### **WILLIAM MORRISON, M.D.**

- Chairman, Finance Committee, Society of Skeletal Radiology
- Treasurer, Executive Committee, Society of Skeletal Radiology
- Corporate Liason, Society of Skeletal Radiology
- Member, Expert Panel on Musculoskeletal Radiology, American College of Radiology Appropriateness Criteria, American College of Radiology
- Member, Expert Panel on Musculoskeletal Radiology, Continuous Professional Improvement Series, American College of Radiology
- Member, Program Subcommittee, American Roentgen Ray Society
- Associate Editor, Musculoskeletal Section, *Radiology*
- Member, Consulting Editorial Board, *Skeletal Radiology*
- Guest Editor, *Seminars in Musculoskeletal Radiology*
- Guest Editor, *MRI Clinics of North America*
- Reviewer, Scientific Abstracts, 109<sup>th</sup> Annual Meeting, American Roentgen Ray Society
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Journal of Magnetic Resonance Imaging*
- Reviewer, *Osteoarthritis and Cartilage*
- Reviewer, *Radiology*
- Reviewer, *Skeletal Radiology*

### **LEVON NAZARIAN, M.D.**

- Humanitarian and Medical Outreach Award, Armenian American Health Professionals Organization
- Chair, Ultrasound Written Clinical Examination, American Board of Radiology
- Co-Director, Introduction to Research Program, American Roentgen Ray Society
- Member, Board of Governors, American Institute of Ultrasound in Medicine
- Member, Continuing Medical Education Committee, American Institute of Ultrasound in Medicine
- Member, Nominating Committee, American Institute of Ultrasound in Medicine
- Member, Program Committee, Society of Radiologists in Ultrasound
- 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, American Roentgen Ray Society
- Member, Editorial Policy Subcommittee, American Roentgen Ray Society
- Associate Editor, *Journal of Ultrasound in Medicine*
- Associate Editor, *Radiology*
- Member, Advisory Editorial Board, *Ultrasound in Medicine and Biology*
- Member, Editorial Advisory Council, *The New American Medical Journal*
- Reviewer, *Clinical Orthopaedics and Related Research*
- Reviewer, *Academic Radiology*
- Reviewer, *American Journal of Roentgenology*

- Reviewer, *Archives of Dermatology*
- Reviewer, *Radiology*
- Reviewer, *Journal of Orthopedic Research*
- Reviewer, *Journal of Rheumatology*
- Reviewer, *Ultrasound in Medicine and Biology*
- Reviewer, *Ultrasound Quarterly*

### **LAURENCE NEEDLEMAN, M.D.**

- Vice-President, Board of Directors, Intersocietal Commission on Accreditation of Vascular Laboratories
- Member, Board of Directors, Pennsylvania Radiological Society
- Member, Ultrasound Guidelines and Standard Committee, American College of Radiology
- Member, Collaborative Committee, Practice Guideline for the Performance of Peripheral Venous Ultrasound Examination, American College of Radiology and American Institute of Ultrasound in Medicine
- Member, Collaborative Committee, Practice Guideline for the Performance of Peripheral Arterial Ultrasound using Color and Spectral Doppler, American College of Radiology and American Institute of Ultrasound in Medicine
- Member, Collaborative Committee, Practice Guideline for the Performance of Diagnostic and Screening Ultrasound of the Abdominal Aorta in Adults, American College of Radiology and American Institute of Ultrasound in Medicine
- Member, Public Information Advisors Network, Radiological Society of North America
- Reviewer, Intersocietal Commission on Accreditation of Vascular Laboratories
- Member, Editorial Board, *Journal of Ultrasound in Medicine*
- Reviewer, Scientific Abstracts, Scientific Sessions 2008, American Heart Association
- Reviewer, *Journal of Ultrasound in Medicine*

### **PATRICK O'KANE, M.D.**

- Consultant, Chernobyl Research Unit, Project, Radiation Epidemiology Branch, National Cancer Institute

### **LAURENCE PARKER, PH.D.**

- Reviewer, *Journal of the American College of Radiology*

### **VIJAY RAO, M.D.**

- Vice-President, American Association for Women Radiologists
- Member, Research and Education Evaluation Committee, Radiological Society of North America
- Member, Board of Trustees, Research and Education Foundation, Radiological Society of North America
- Member, Individual Giving Subcommittee, Research and Education Foundation, Radiological Society of North America

- Member, Nominating Committee, Research and Education Foundation, Radiological Society of North America
- Member, Clinical Practice Committee, American Society of Head and Neck Radiology
- Member, Future Trends Committee, American College of Radiology
- Member, Practice Leaders Committee, American College of Radiology
- Member, Practice Leaders Web Subcommittee, American College of Radiology
- Association of Program Directors in Radiology Liaison to Society of Chairmen of Academic Radiology Departments
- Assistant Editor, Health Policy, *Journal of the American Roentgen Ray Society*
- Member, Editorial Board, *Journal of the American College of Radiology*
- Reviewer, Scientific Exhibits, *Radiographics*, Radiological Society of North America
- Reviewer, Scientific Abstracts, 94<sup>th</sup> Scientific Assembly and Annual Meeting of the Radiological Society of North America
- Reviewer, Scientific Abstracts, 56<sup>th</sup> Annual Meeting of the Association of University Radiologists
- Reviewer, Scientific Abstracts, 41<sup>st</sup> Annual Meeting of the American Society of Head and Neck Radiology
- Reviewer, *Academic Radiology*
- Reviewer, *American Journal of Neuroradiology*
- Reviewer, *Health Affairs*
- Reviewer, *Radiographics*
- Reviewer, *Radiology*
- Exceptional Reviewer, *Journal of the American College of Radiology*
- Named as one of the “Best Doctors in America 2009-2010”, *Philadelphia Magazine*
- Named as one of “America’s Top Doctors for Cancer”, Castle Connolly Medical Ltd.

### **CHRISTOPHER ROTH, M.D.**

- Reviewer, *Journal of Magnetic Resonance Imaging*

### **SHARON SEGAL, D.O.**

- 2009 Woman of the Year, Philadelphia/Delaware Valley Chapter, Crohn’s and Colitis Foundation of America

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

- Examiner, American Board of Radiology

### **MATHEW THAKUR, PH.D.**

- Delegate-at-Large, Society of Nuclear Medicine
- Member, Board of Governors, Greater New York Chapter, Society of Nuclear Medicine
- Member, Board of Directors, Society of Nuclear Medicine
- Member, Advisory Committee, US Pharmacopeia
- Member, Advisory Committee, Kuwait Medical Research Council
- Member, Advisory Committee, International Atomic Energy Agency
- Member, Board of Directors, Molecular Imaging Center of Excellence, Society of Nuclear Medicine

- Chair, Young Investigators Award Committee, International Society of Radiolabeled Blood Elements
- Chair, Molecular Imaging Center of Excellence Task Force on Awards and Grants, Society of Nuclear Medicine
- Chair, Review Committee, International Atomic Energy Agency
- Member, Scientific Program Committee, 9<sup>th</sup> Asia Oceanic Congress of Nuclear Medicine and Biology
- Society of Nuclear Medicine Radiopharmaceuticals Science Council Liaison to Society of Nuclear Medicine Board of Directors
- Chair, Award Committee, Society of Nuclear Medicine
- *Ad hoc* member, Grant Review Service, National Institutes of Health
- Member, Grant Review Service, Foundation for Medical Research, Vienna, Austria
- Member, Financial Committee, Society of Nuclear Medicine
- Member, Public Relations Committee, Society of Nuclear Medicine
- Member, Board of Directors, Eagle Alliance
- Member, Editorial Board, *European Journal of Nuclear Medicine*
- Member, Editorial Board, *Journal of the Association of Latin American Societies of Nuclear Medicine and Biology*
- Member, Editorial Board, *Journal of the Indian Association of Clinical Medicine*
- Member, Editorial Board, *Journal of Labeled Compounds and Radiopharmaceuticals*
- Member, Editorial Board, *Journal of Nuclear Medicine*
- Member, Editorial Board, *Journal of Nuclear Medicine and Biology*
- Member, Editorial Board, *Nuclear Medicine Communications*
- Member, Editorial Board, *Turkish Journal of Nuclear Medicine*
- Reviewer, *Post Graduate Medical Journal*, London, England
- Reviewer, *Oncology*
- Reviewer, *Veterernian Journal of Pharmaceuticals and Therapy*
- Reviewer, *Bioorganic and Medicinal Chemistry*
- Reviewer, *Diabetes*
- Reviewer, *European Journal of Nuclear Medicine*
- Reviewer, *Journal of Labeled Compounds and Radiopharmaceuticals*
- Reviewer, *Journal of Nuclear Medicine*
- Reviewer, *Journal of Nuclear Medicine and Biology*
- Reviewer, *Nuclear Medicine Communications*

### **TERRI TUCKMAN, M.D.**

- Director of Students, American Medical Women's Association
- Member, Professional Development Committee, American Medical Women's Association
- Member, Committee on Gender Equity, American Medical Women's Association

### **ANNINA WILKES, M.D.**

- Member, Medical Advisory Board, Susan A. Komen Foundation
- Member, Speakers Bureau, Susan A. Komen Foundation
- Member, The Breast Health Global Initiative
- Member, Women's Health Committee, American Medical Women's Association
- Member, Reach to Recovery Program Committee, American Cancer Society
- Member, Medical Advisory Board, Linda Creed Breast Cancer Foundation

**SHAOXIONG ZHANG, PH.D.**

- Member, International Reviewers Panel, *Medical Science Monitor*
- Reviewer, *American Journal of Roentgenology*

**ADAM ZOGA, M.D.**

- Member, Expert Panel, Musculoskeletal Radiology Appropriateness Criteria, American College of Radiology
- Member, Finance Committee, Society of Skeletal Radiology
- Member, Scientific Program Committee, Annual Meeting, American Roentgen Ray Society
- Reviewer, Scientific Posters, *Radiographics*, Radiological Society of North America
- Reviewer, *American Journal of Radiographics*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Radiology Case Reports*

**APPENDIX IV - ACTIVE GRANTS**

**07/01/08 - 06/30/09**

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

**NIH/OTHER FEDERAL GRANTS**

<b>PRINCIPAL INVESTIGATOR</b>	<b>TITLE OF PROJECT</b>	<b>FUNDING SOURCE</b>	<b>FUNDING DATES</b>	<b>DIRECT COSTS</b>	<b>INDIRECT COSTS</b>	<b>TOTAL COSTS FUNDED</b>
Flanders, A. Z40401	caBIG - In Vivo Imaging Workspace	NIH (NCI) thru Booz Allen Hamilton Inc	10/01/05 - 09/29/08	\$60,870 ----- \$8,119 (current fiscal yr)	\$33,666 ----- \$4,465 (current fiscal yr)	\$94,536 ----- \$12,584 (current fiscal yr)
Flanders, A. Z51401	caBIG - In Vivo Imaging Workspace	NIH (NCI) thru Booz Allen Hamilton Inc	10/01/08 - 02/14/09	\$11,773 ----- \$11,773 (current fiscal yr)	\$6,417 ----- \$6,417 (current fiscal yr)	\$18,190 ----- \$18,190 (current fiscal yr)
Flanders, A. Z51402	caBIG - In Vivo Imaging Workspace	NIH (NCI) thru Booz Allen Hamilton Inc	02/15/09 - 02/14/10	\$16,356 ----- \$672 (current fiscal yr)	\$8,914 ----- \$366 (current fiscal yr)	\$25,270 ----- \$1,038 (current fiscal yr)
Forsberg, F. R84301	Subharmonic Microbubble Signals for Pressure Estimation	NIH (NHLBI) R21 HL081892	01/15/07 - 12/31/09	\$330,284 ----- \$94,571 (current fiscal yr)	\$145,908 ----- \$40,209 (current fiscal yr)	\$476,192 ----- \$134,780 (current fiscal yr)
Forsberg, F. X12301	Noninvasive Subharmonic Pressure Estimation for Monitoring Breast cancer	U.S. Army Medical Research Acq. W81XWH-08-1-0503	09/01/08 - 08/31/11	\$297,357 ----- \$47,852 (current fiscal yr)	\$162,060 ----- \$24,827 (current fiscal yr)	\$459,417 ----- \$72,678 (current fiscal yr)
Forsberg, F. Z41001 (subcontract)	Broad Band Single Crystal Transducers for Contrast Agent Harmonic Imaging	NIH thru TRS Ceramics, Inc. R44 RR018016	09/25/05 - 08/31/08	\$45,756 ----- \$12,007 (current fiscal yr)	\$25,623 ----- \$7,062 (current fiscal yr)	\$71,379 ----- \$19,069 (current fiscal yr)
Goldberg, B. R74401	US Detection of Sentinel Lymph Nodes in Melanoma	NIH (NCI) R01 CA100370	08/01/04 - 07/31/09	\$620,923 ----- \$112,462 (current fiscal yr)	\$326,798 ----- \$61,854 (current fiscal yr)	\$947,721 ----- \$174,316 (current fiscal yr)

Goldberg, B. R93801	Contrast-Enhanced Ultrasound Detection of Secondary Lymph Nodes	NIH (NCI) R21 CA137733	12/01/08 - 11/30/10	\$220,000 -- \$34,997 (current fiscal yr)	\$119,900 -- \$19,057 (current fiscal yr)	\$339,900 -- \$54,053 (current fiscal yr)
Goldberg, B. Z26902 (subcontract)	Development of a New Class of Ultrasound Contrast Agents	NIH thru Drexel University R01 HL52901	08/01/06 - 06/30/09	\$107,603 -- \$10,432 (current fiscal yr)	\$59,183 -- \$5,946 (current fiscal yr)	\$166,786 -- \$16,379 (current fiscal yr)
Halpern, E. R83101	US Prostate Cancer Detection with Dutasteride Pretreatment	NIH (NCI) R01 CA118003	07/14/06 - 06/30/10	\$710,324 -- \$176,681 (current fiscal yr)	\$390,678 -- \$96,089 (current fiscal yr)	\$1,101,002 -- \$272,769 (current fiscal yr)
Intenzo, C. Z37201	Positron Emission Tomography Pre- and Post-treatment Assessment for Locally Advanced Non-small Cell Lung Carcinoma	NIH thru ACRIN (cooperative group)	01/01/05 - 12/31/09	\$32,000 -- \$1,091 (current fiscal yr)	\$8,000 -- \$218 (current fiscal yr)	\$40,000 -- \$1,309 (current fiscal yr)
Lai, S. R78901	Statistical Analysis of Radionuclide Images	NIH R01 EB002774	08/03/05 - 07/31/08	\$326,350 -- \$22,462 (current fiscal yr)	\$182,755 -- \$14,540 (current fiscal yr)	\$509,105 -- \$37,002 (current fiscal yr)
Merritt, C. Z32301	Screening Breast US in High Risk Women	NIH thru ACRIN (cooperative group)	01/01/04 - 12/31/08	\$90,037 -- \$4,554 (current fiscal yr)	\$22,985 -- \$1,614 (current fiscal yr)	\$113,022 -- \$6,169 (current fiscal yr)
Mitchell, D. G07401	ACR Commonwealth of PA Participant Institution	PA Department of Health thru ACRIN (cooperative group)	01/01/06 - 12/31/08	\$15,600 -- \$785 (current fiscal yr)	\$3,900 -- \$196 (current fiscal yr)	\$19,500 -- \$981 (current fiscal yr)
Mitchell, D. G09001	ACRIN PA 4002: Angle Interleaved Projection Reconstruction with K-Space Weighted Image Reconstruction for Dynamic Contrast MRI of Cancer Therapy Response	PA Department of Health thru ACRIN (cooperative group)	08/01/07 - 12/31/09	\$69,304 -- \$22,015 (current fiscal yr)	\$17,326 -- \$5,503 (current fiscal yr)	\$86,630 -- \$27,518 (current fiscal yr)
Morrison, W. G07501	ACRIN PA 4001: Multicenter Trial on MR Image Markers of Knee Articular Cartilage Damage in Osteoarthritis	PA Department of Health thru ACRIN (cooperative group)	01/01/06 - 12/31/08	\$61,609 -- \$0 (current fiscal yr)	\$15,402 -- \$0 (current fiscal yr)	\$77,011 -- \$0 (current fiscal yr)



Morrison, W. Z45501 (subcontract)	Skeletal Development in Clubfoot Treatment	NIH thru Drexel University R21 AR053255	09/01/06 - 07/31/09	\$8,818 ----- \$5,307 (current fiscal yr)	\$4,849 ----- \$2,665 (current fiscal yr)	\$13,667 ----- \$7,972 (current fiscal yr)
O'Kane, P. Y00501	IPA for Chornobyl Research Unit	NIH (NCI)	04/01/06 - 10/31/09	\$12,420 ----- \$0 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$12,420 ----- \$0 (current fiscal yr)
Thakur, M. R76901	PET Imaging of Breast Cancer Using Oncogene Expression	NIH (NCI) R01 CA109231	04/01/05 - 02/28/10	\$1,019,422 ----- \$176,815 (current fiscal yr)	\$550,604 ----- \$97,248 (current fiscal yr)	\$1,570,026 ----- \$274,063 (current fiscal yr)
Thakur, M. R78701	Improved Molecular Imaging with SPECT	NIH R01 EB001809	09/10/03 - 07/31/09	\$585,740 ----- \$93,253 (current fiscal yr)	\$319,426 ----- \$51,289 (current fiscal yr)	\$905,166 ----- \$144,543 (current fiscal yr)
Thakur, M. R89101	PET for Molecular Imaging of Small Animals	NIH S10 RR023709	04/01/08 - 03/31/10	\$500,000 ----- \$450,000 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$500,000 ----- \$450,000 (current fiscal yr)
Wolf, M. Z47501	A Randomized Phase III Trial of Bevacizumab with Irinotecan or Beverizumab with Temozolomide in Recurrent Glioblastoma	NIH thru ACRIN (cooperative group)	01/01/07 - 12/31/09	\$8,000 ----- \$1,315 (current fiscal yr)	\$2,000 ----- \$329 (current fiscal yr)	\$10,000 ----- \$1,115 (current fiscal yr)
<b>TOTAL NIH/FEDERAL FUNDING</b>				\$5,150,546	\$2,406,394	\$7,556,940
<b>CURRENT YEAR NIH/ FEDERAL FUNDING</b>				\$1,287,163	\$439,893	\$1,727,056

Active Grants

07/01/08 - 06/30/09

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

**FOUNDATION/NON-PROFIT ORGANIZATION GRANTS**

PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	FUNDING SOURCE	FUNDING DATES	DIRECT COSTS	INDIRECT COSTS	TOTAL COSTS FUNDED
Forsberg, F. F75001	Intra-Cardiac Pressure Measurements	American Heart Association	07/01/06 - 12/30/08	\$109,090 -- \$16,009 (current fiscal yr)	\$10,910 -- \$1,601 (current fiscal yr)	\$120,000 -- \$17,609 (current fiscal yr)
Parker, L. N03001	How Much Could Substitution of US for CT Save in Imaging Evaluation of Appendicitis	American Institute of Ultrasound in Medicine	01/27/09 - 06/30/10	\$50,000 -- \$25,000 (current fiscal yr)	\$0 -- \$0 (current fiscal yr)	\$50,000 -- \$25,000 (current fiscal yr)
Rao, V. F65401	Center for Research on Utilization of Imaging Services	American College of Radiology	01/01/04 - 5/16/10	\$476,840 -- \$85,000 (current fiscal yr)	\$0 -- \$0 (current fiscal yr)	\$476,840 -- \$85,000 (current fiscal yr)
			<b>TOTAL NON-PROFIT FUNDING</b>	\$635,930	\$10,910	\$646,840
			<b>CURRENT YEAR NON-PROFIT FUNDING</b>	\$126,009	\$1,601	\$127,609

**Active Grants**

07/01/08 - 06/30/09

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

**INDUSTRIAL GRANTS**

PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	FUNDING SOURCE	FUNDING DATES	DIRECT COSTS	INDIRECT COSTS	TOTAL COSTS FUNDED
Cavanaugh, B. J43001	Assessment of the Clinical Value of SuperSonic Shear Wave Elastography	SuperSonic Imagine	10/16/08 - 10/16/11	\$86,945 ----- \$17,369 (current fiscal yr)	\$20,986 ----- \$4,342 (current fiscal yr)	\$107,931 ----- \$21,711 (current fiscal yr)
Flanders, A. A53601	ADCON-L MRI Research Project	GliaTech	09/01/01 - 12/31/50	\$25,000 ----- \$0 (current fiscal yr)	\$6,250 ----- \$0 (current fiscal yr)	\$31,250 ----- \$0 (current fiscal yr)
Goldberg, B. J45901	GOP iCE US™ Software Evaluation	Context Vision AB	01/23/09 - 01/23/10	\$32,000 ----- \$32,000 (current fiscal yr)	\$7,375 ----- \$7,375 (current fiscal yr)	\$39,375 ----- \$39,375 (current fiscal yr)
Intenzo, C. J34201	A Phase I Open Label Single Center Safety Study of [F-18]FLT	Siemens Molecular Imaging	11/02/07 - 11/02/08	\$45,000 ----- \$24,278 (current fiscal yr)	\$10,000 ----- \$6,070 (current fiscal yr)	\$55,000 ----- \$30,348 (current fiscal yr)
Intenzo, C. J43801	An Exploratory, Open Label, Multi-Center, Non-Randomized Study of (F-18)RGD-K5, K5-100	Siemens Molecular Imaging	09/30/08 - 09/29/09	\$13,626 ----- \$13,626 (current fiscal yr)	\$3,406 ----- \$3,406 (current fiscal yr)	\$17,032 ----- \$17,032 (current fiscal yr)
Liu, J. J35601	Fluorescence Guided Surgery	General Electric Company	12/21/07 - 08/30/09	\$43,521 ----- \$16,660 (current fiscal yr)	\$10,255 ----- \$4,165 (current fiscal yr)	\$53,776 ----- \$20,825 (current fiscal yr)
Mitchell, D. J47001	Fatty Liver and Metabolic Syndrome	Philips Medical Systems North America	09/01/08 - 09/01/09	\$20,500 ----- \$20,500 (current fiscal yr)	\$4,500 ----- \$4,500 (current fiscal yr)	\$25,000 ----- \$25,000 (current fiscal yr)

Mitchell, D. J47101	Evaluation of Hepatocellular Carcinoma Response	Philips Medical Systems North America	01/08/09 - 06/05/10	\$10,000 -- \$10,000 (current fiscal yr)	\$2,500 -- \$2,500 (current fiscal yr)	\$12,500 -- \$12,500 (current fiscal yr)
Sharma, D. A81301	Digital Imaging Research	AGFA Corporation	11/15/04 - 11/30/09	\$21,633 -- \$1,921 (current fiscal yr)	\$4,783 -- \$0 (current fiscal yr)	\$26,416 -- \$1,921 (current fiscal yr)
Thakur, M. E14101	Atomlab 5000 Plus Dose Calibrator Testing Study	Biodex Medical Systems	04/23/09 - 04/22/10	\$2,500 -- \$2,500 (current fiscal yr)	\$0 -- \$0 (current fiscal yr)	\$2,500 -- \$2,500 (current fiscal yr)
Thakur, M. J43901	Supplement to NIH Grant	NuView Radio- Pharmaceuticals	07/24/08 - 02/28/10	\$49,700 -- \$24,850 (current fiscal yr)	\$12,425 -- \$6,213 (current fiscal yr)	\$62,125 -- \$31,063 (current fiscal yr)
<b>TOTAL INDUSTRIAL FUNDING CURRENT YEAR INDUSTRIAL FUNDING</b>				\$350,425 -- \$163,704 (current fiscal yr)	\$82,480 -- \$38,571 (current fiscal yr)	\$432,905 -- \$202,274 (current fiscal yr)
<b>TOTAL FUNDING</b>				\$6,136,901 -- \$1,576,875 (current fiscal yr)	\$2,499,784 -- \$480,065 (current fiscal yr)	\$8,636,685 -- \$2,056,940 (current fiscal yr)

**APPENDIX V - PENDING GRANTS**

07/01/08 - 06/30/09

(Report reflects entire award period and first year of award)

**NIH/OTHER FEDERAL GRANTS**

PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	FUNDING SOURCE	FUNDING DATES	DIRECT COSTS	INDIRECT COSTS	TOTAL COSTS FUNDED
Forsberg, F. (subcontract)	IVUS Detection of Rupture Prone Plaques	NIH thru University of Rochester	05/01/09 - 04/31/11	\$86,646 -- \$42,742 (-01 year)	\$47,222 -- \$23,294 (-01 year)	\$133,868 -- \$66,036 (-01 year)
Forsberg, F.	Noninvasive and Accurate Measurement of Portal Hypertension	NIH	10/01/09 - 09/30/11	\$685,052 -- \$363,943 (-01 year)	\$209,873 -- \$89,350 (-01 year)	\$894,925 -- \$453,293 (-01 year)
Flanders, A.	Value of MRI and DTI as Biomarkers for Classifying Acute Spinal Cord Injury	NIH	10/01/09 - 09/30/11	\$427,150 -- \$210,706 (-01 year)	\$232,799 -- \$114,835 (-01 year)	\$659,949 -- \$325,541 (-01 year)
Halpern, E.	Active Surveillance of Prostate Cancer with Contrast-Enhanced Ultrasound	NIH	04/01/10 - 03/31/15	\$1,961,330 -- \$359,353 (-01 year)	\$1,068,923 -- \$195,847 (-01 year)	\$3,030,253 -- \$555,200 (-01 year)
Halpern, E.	Effectiveness of Coronary CT Angiography for Evaluation of Acute Chest Pain	NIH	10/01/09 - 09/30/11	\$547,330 -- \$276,270 (-01 year)	\$298,295 -- \$150,567 (-01 year)	\$845,625 -- \$426,837 (-01 year)
Liu, J.	RF Ablation with Contrast US Monitoring as Primary Treatment for Prostate Cancer	NIH	10/01/09 - 09/30/11	\$484,659 -- \$241,472 (-01 year)	\$206,915 -- \$117,978 (-01 year)	\$691,574 -- \$359,450 (-01 year)
Liu, J.	Hybrid High Intensity Focused Ultrasound Transducer Development	SBIR thru Spectrasonics	11/01/10 - 04/31/11	\$28,561 -- \$28,561 (-01 year)	\$15,566 -- \$15,566 (-01 year)	\$44,127 -- \$44,127 (-01 year)

Mitchell, D.	Non-Alcoholic Fatty Liver Disease: Monitoring 3 Treatments by MRI at 3T and 1.5T	NIH	10/01/09 - 09/30/11	\$573,281	\$224,387	\$797,668
				---	---	---
				\$285,085 (-01 year)	\$112,535 (-01 year)	\$397,620 (-01 year)
Morrison, W.	Meniscal Instability Biomarkers on 3T Stress MRI: Predicting OA Risk	NIH	10/01/09 - 09/30/11	\$512,135	\$170,598	\$682,733
				---	---	---
				\$343,408 (-01 year)	\$98,868 (-01 year)	\$442,276 (-01 year)
Morrison, W.	Cross-Platform Implementation and Validation of MicroMRI Technologies	SBIR thru MicroMRI	12/01/09 - 05/31/12	\$239,553	\$80,580	\$320,133
				---	---	---
				\$16,113 (-01 year)	\$3,427 (-01 year)	\$19,540 (-01 year)
Needleman, L.	Lymph Node Ablation Using a Novel Ultrasound Contrast Agent Delivery System	NIH	10/01/09 - 09/30/11	\$696,489	\$192,189	\$888,678
				---	---	---
				\$332,102 (-01 year)	\$94,395 (-01 year)	\$426,497 (-01 year)
Rao, V.	Stratifying Risk and Outcomes of Asymptomatic Carotid Disease Using Medicare Data	NIH	10/01/09 - 09/30/11	\$552,685	\$301,213	\$853,898
				---	---	---
				\$287,279 (-01 year)	\$156,567 (-01 year)	\$443,846 (-01 year)
Rao, V.	Biospec 7.0/30 USR Superconducting Magnet System	NIH	12/01/09 - 11/30/10	\$2,182,000	\$0	\$2,182,000
				---	---	---
				\$2,182,000 (-01 year)	\$0 (-01 year)	\$2,182,000 (-01 year)
Tartaglino, L.	MR Parameters as Predictors of Clinical Outcome in Hypothermia Treated HIE Neonates	NIH	10/01/09 - 09/30/11	\$470,010	\$179,462	\$649,472
				---	---	---
				\$218,851 (-01 year)	\$95,130 (-01 year)	\$313,981 (-01 year)
Thakur, M.	Prostate Cancer: Novel Therapy and Molecular Assessment	NIH	10/01/09 - 09/30/11	\$646,883	\$352,551	\$999,434
				---	---	---
				\$323,389 (-01 year)	\$176,246 (-01 year)	\$499,635 (-01 year)
Thakur, M.	PET Imaging of Breast Cancer Using Oncogene Expression Administrative Supplement	NIH	10/01/09 - 09/30/11	\$247,179	\$134,713	\$381,892
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				\$122,020 (-01 year)	\$66,501 (-01 year)	\$188,521 (-01 year)

Thakur, M.	Selective Prostate Cancer Therapy and its Effectiveness	NIH	04/01/10 - 03/31/13	\$1,110,427 -- \$335,419 (-01 year)	\$605,182 -- \$182,803 (-01 year)	\$1,715,609 -- \$518,222 (-01 year)
Thakur, M.	Optical Imaging for Translational Cancer Research	NIH	04/01/10 - 03/31/11	\$175,000 -- \$175,000 (-01 year)	\$0 -- \$0 (-01 year)	\$175,000 -- \$175,000 (-01 year)
Thakur, M.	Genomic Approaches to PET Imaging of Prostate Cancer	SBIR thru NuView Radiopharmaceuticals	01/01/10 - 12/31/12	\$421,291 -- \$128,766 (-01 year)	\$229,604 -- \$70,177 (-01 year)	\$650,895 -- \$198,943 (-01 year)
<b>TOTAL NIH GRANT FUNDING</b>				\$12,047,661	\$4,550,072	\$16,597,733
<b>TOTAL FIRST YEAR NIH FUNDING</b>				\$6,272,479 (-01 year)	\$1,764,086 (-01 year)	\$8,036,565 (-01 year)

Pending Grants 07/01/08 - 06/30/09 (Report reflects entire award period and first year of award)						
INDUSTRIAL GRANTS						
PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	FUNDING SOURCE	FUNDING DATES	DIRECT COSTS	INDIRECT COSTS	TOTAL COSTS FUNDED
Goldberg, B.	Characterization of Focal Liver Lesions with Sonovue-Enhanced Ultrasound Imaging: A Phase III, Inpatient Comparative Study Versus Unenhanced Ultrasound Imaging Using Histology or Combined Imaging/Clinical Data as Truth Standard	Bracco Diagnostic Inc	11/01/09 - 10/31/11	\$77,760	\$19,440	\$97,200
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				\$77,760 (-01 year)	\$19,440 (-01 year)	\$97,200 (-01 year)
Wilkes, A.	Breast Companion Software Evaluation	Almen Laboratories	08/20/09 - 08/19/10	\$12,000	\$3,000	\$15,000
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				\$12,000 (-01 year)	\$3,000 (-01 year)	\$15,000 (-01 year)
			TOTAL INDUSTRIAL FUNDING	\$89,760	\$22,440	\$112,200
			TOTAL FIRST YEAR INDUSTRIAL FUNDING	-----	-----	-----
				\$89,760 (-01 year)	\$22,440 (-01 year)	\$112,200 (-01 year)
			TOTAL PENDING FUNDING	\$12,137,421	\$4,572,512	\$16,709,933
			TOTAL FIRST YEAR PENDING FUNDING	-----	-----	-----
				\$6,362,239 (-01 year)	\$1,786,526 (-01 year)	\$8,148,765 (-01 year)