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Department of Radiology-Annual Executive Summary Report-July 1, 2010 to June 30, 2011

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Department of Radiology

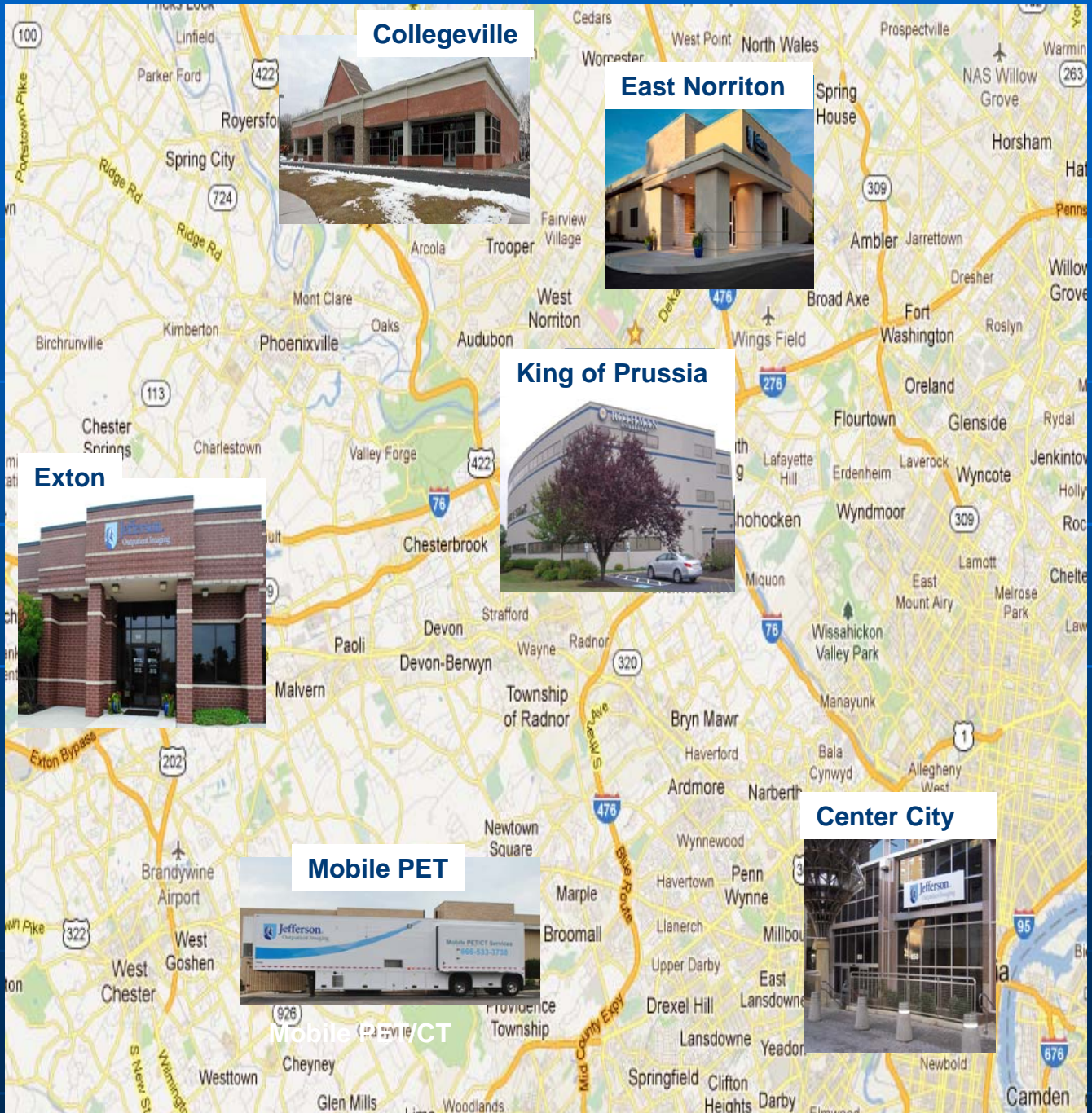
Annual Executive Summary Report

July 1, 2010 to June 30, 2011

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

Department of Radiology

JV Outpatient Imaging Centers





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



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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 QA & Performance Improvement
Levon N. Nazarian, M.D.	Vice Chair for Education
Christopher Roth, M.D.	Vice Chair for Methodist Radiology

2010-2011

DEPARTMENT CLINICAL DIVISIONS AND DIRECTORS

BODY COMPUTED TOMOGRAPHY/ABDOMINAL IMAGING	Laurence Needleman, M.D.
BREAST IMAGING	Barbara C. Cavanaugh, M.D.
INTERVENTIONAL RADIOLOGY	Daniel B. Brown, M.D.
MAGNETIC RESONANCE IMAGING	Donald G. Mitchell, M.D.
METHODIST RADIOLOGY	Christopher G. Roth, M.D.
MUSCULOSKELETAL AND GENERAL DIAGNOSTIC RADIOLOGY	William B. Morrison, M.D.
NEURORADIOLOGY/ENT RADIOLOGY	Adam E. Flanders, M.D. David P. Friedman, M.D.
NUCLEAR MEDICINE	Charles M. Intenzo, M.D.
ULTRASOUND	Barry B. Goldberg, M.D.

DEPARTMENTAL COMMITTEES AND CHAIRMEN

ADVISORY COMMITTEE	Patrick O’Kane, M.D.
CLINICAL OPERATIONS COMMITTEE	Geoffrey Gardiner, Jr., M.D.
CONTRAST COMMITTEE	Laurence Needleman, M.D.
DIVISION DIRECTORS COMMITTEE	Vijay M. Rao, M.D.
EDUCATION COMMITTEE	Levon N. Nazarian, M.D.
INFORMATICS STEERING COMMITTEE	Victor Sarro
PERFORMANCE IMPROVEMENT COMMITTEE	Christopher R.B. Merritt, M.D.
RESEARCH COMMITTEE	Barry B. Goldberg, M.D. Ethan J. Halpern, M.D.
RESIDENCY SELECTION COMMITTEE	Sandeep P. Deshmukh, M.D.

**RADIOLOGY DEPARTMENT FACULTY RANK
2010-2011**

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.
Adam C. Zoga, 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.
Jeffrey W. McCann, M.D.
Christopher G. Roth, M.D.
Sharon R. Segal, D.O.
Dinesh K. Sharma, M.D.
Conor Shortt, M.D.
Annina N. Wilkes, M.D.

**CLINICAL ASSISTANT
PROFESSORS**

Amy F. Austin, M.D.
Michael Birkhoff, M.D.
Mark W. Cooper, M.D.
Sandeep Deshmukh, M.D.
Flavius Guglielmo, M.D.
George Paul Hobbs, M.D.
Elizabeth H. Hsu, M.D.
Cindy Isaacson-Finden, M.D.
Suzanne Long, M.D.
Kristen McClure, M.D.
Cynthia L. Miller, M.D.
Neeta Rao, M.D.
Lillian H. Stern, M.D.
Terri Tuckman, M.D.
Nylah Fatima Wasti, M.D.

**RESEARCH ASSISTANT
PROFESSOR**

Eric Gingold, Ph.D.
Laurence Parker, Ph.D.

INSTRUCTORS

Mark D. Allan, M.D.
Susan DeWyngaert, M.D.
Achala Donuru, M.D.
Tara Eisenberg, 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]

Andrew B. Newberg, M.D., Professor of Integrative 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., Professor of Neurology [primary]
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 2010-2011

Body Computed Tomography/ Abdominal Imaging

Directed by Laurence Needleman, M.D.

Drs. Oksana Baltarowich, Sandeep Deshmukh, Rick Feld, Flavius Guglielmo, Ethan Halpern, David Karasick, Stephen Karasick, Alfred Kurtz, Levon Nazarian, Patrick O'Kane

Breast Imaging

Directed by Barbara C. Cavanuagh, M.D.

Drs. Susan DeWyngaert, Tara Eisenberg, Cindy Finden, Elizabeth Hsu, Nylah Wasti, Annina Wilkes

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, Sandeep Deshmukh, Angela Gopez, Flavius Guglielmo, William Morrison, Patrick O'Kane, Conor Shortt, Adam Zoga

Methodist Radiology

Directed by Christopher Roth, M.D.

Drs. Mark Allan, Michael Birkhoff, Mark Cooper, G. Paul Hobbs, Kristen McClure, Cynthia Miller, Lillian Stern

Musculoskeletal and General Diagnostic Radiology

Directed by William B. Morrison, M.D.

Drs. Amy Austin, Diane Deely, Achala Donuru, Cindy Finden, Angela Gopez, David Karasick, Stephen Karasick, Suzanne Long, Manoharan Muthuvelu, Dinesh Sharma, Conor Shortt, Adam Zoga

Neuroradiology/ENT Radiology

Directed by Adam Flanders, M.D., David Friedman, M.D.

Drs. Steve Finden, Richard Gorniak, Neeta Rao, Vijay Rao, Dinesh Sharma, Lisa Tartaglino, Michael J. Wolf

Nuclear Medicine

Directed by Charles M. Intenzo, M.D.

Dr. Sung Kim

Ultrasound

Directed by Barry B. Goldberg, M.D.

Drs. Amy Austin, Oksana Baltarowich, Rick Feld, Flavius Guglielmo, Ethan Halpern, Alfred Kurtz, Chris Merritt, Suzanne Long, Levon Nazarian, Laurence Needleman, Patrick O'Kane, Sharon Segal, Conor Shortt, Terri Tuckman, Annina Wilkes

Research

Drs. Flemming Forsberg, Song Lai, Ji-Bin Liu, Laurence Parker, Mathew Thakur

DEPARTMENT OF RADIOLOGY
HOUSESTAFF ROSTER
2010-2011

RESIDENTS

FIRST YEAR RESIDENTS

Niraj Bhalakia, M.D.
Andrew Chi, M.D.
Christopher Gutjahr, M.D.
Jamie Hui, M.D.
Hassan Irshad, M.D.
Arvin Kheterpal, M.D.
Ilana Neuberger, M.D.
Kathleen Schenker, M.D.
Lodewijk van Holsbeeck, M.D.
Vahe M. Zohrabian, M.D.

THIRD 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.

ABDOMINAL IMAGING

Ernesto I. Blanco, M.D.
Howard S. Boriskin, M.D.
Dennis M. Flamini, D.O.
Kevin D. Frederick, M.D.
Hani Sharkey, M.D.
Nachum B. Stollman, M.D.

BREAST IMAGING

Marzban Rad, M.D.

MUSCULOSKELETAL IMAGING

Sara E. Brooks-Sienkiewicz, M.D.
Paul J. Read, M.D.
Chad Silverberg, D.O.

BODY MRI

Carmine A. Grieco, M.D.

SECOND YEAR RESIDENTS

Allison Borowski, M.D.
Laryssa M. Hud, M.D.
Ryan I. Huffman, M.D.
Nicholas Petruzzi, M.D.
Jason J. Redon, M.D.
Scott J. Sequeira, M.D.
Richard E. Sharpe, M.D.
Bartley G. Thornburg, M.D.
Rebecca C. Winter, M.D.
Vahe M. Zohrabian, M.D.

FOURTH YEAR RESIDENTS

Anton G. Delpont, M.D.
Nancy N. Kang Laurence, M.D.
Jonathan Lieberman, M.D.
Jeffrey J. Mathews, M.D.
Piotr Sadej, M.D.
Michelle G. Sterling, M.D.
Niti Tank, M.D.
Hema S. Thakur, M.D.

Nuclear Medicine

Chaitra Channappa, M.D.
Alexandros Pappas, M.D.
Urmi Sen, M.D.

FELLOWS

VASCULAR/INTERVENTIONAL RADIOLOGY

Neel Patel, M.D.

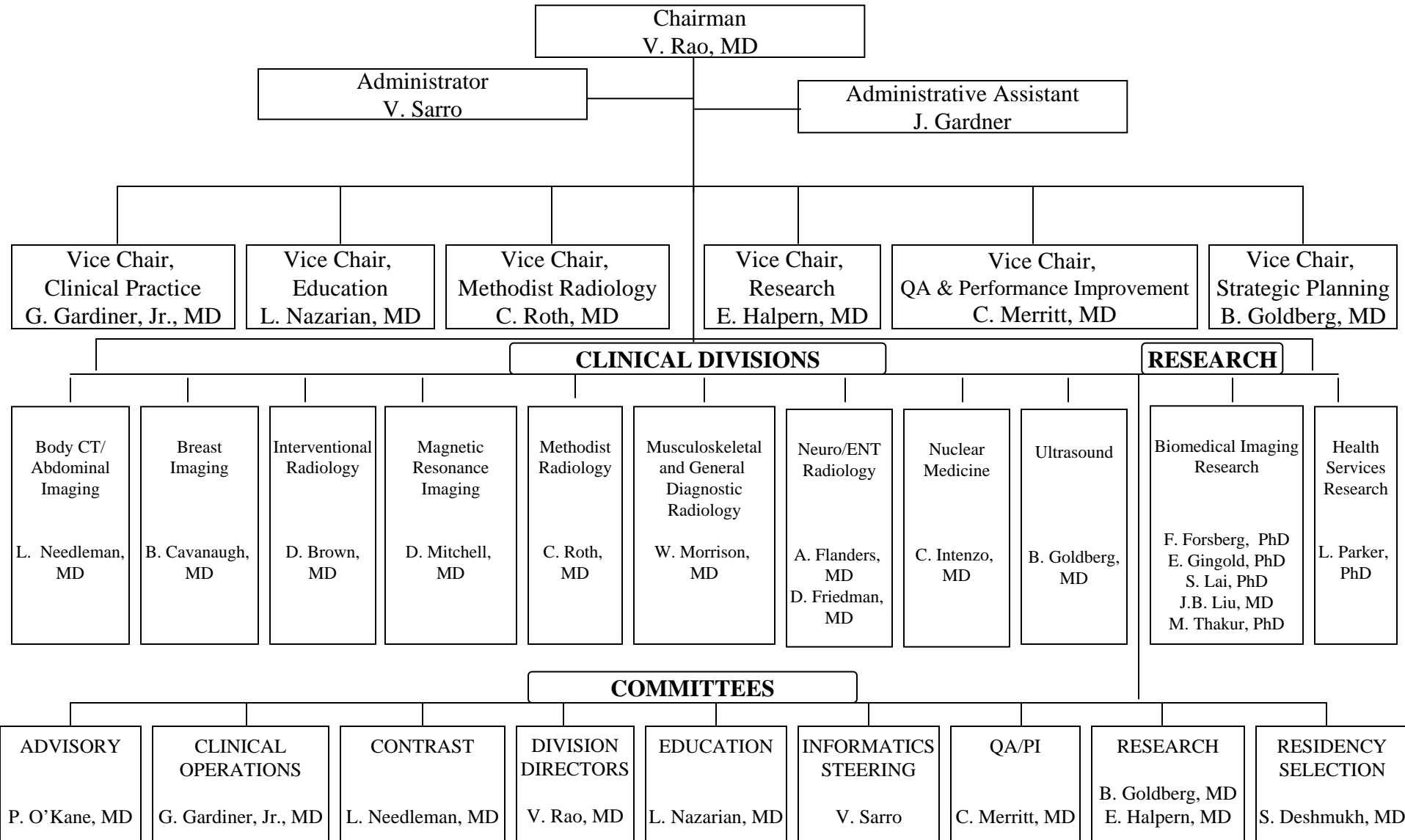
MUSCULOSKELETAL/NEURO MRI

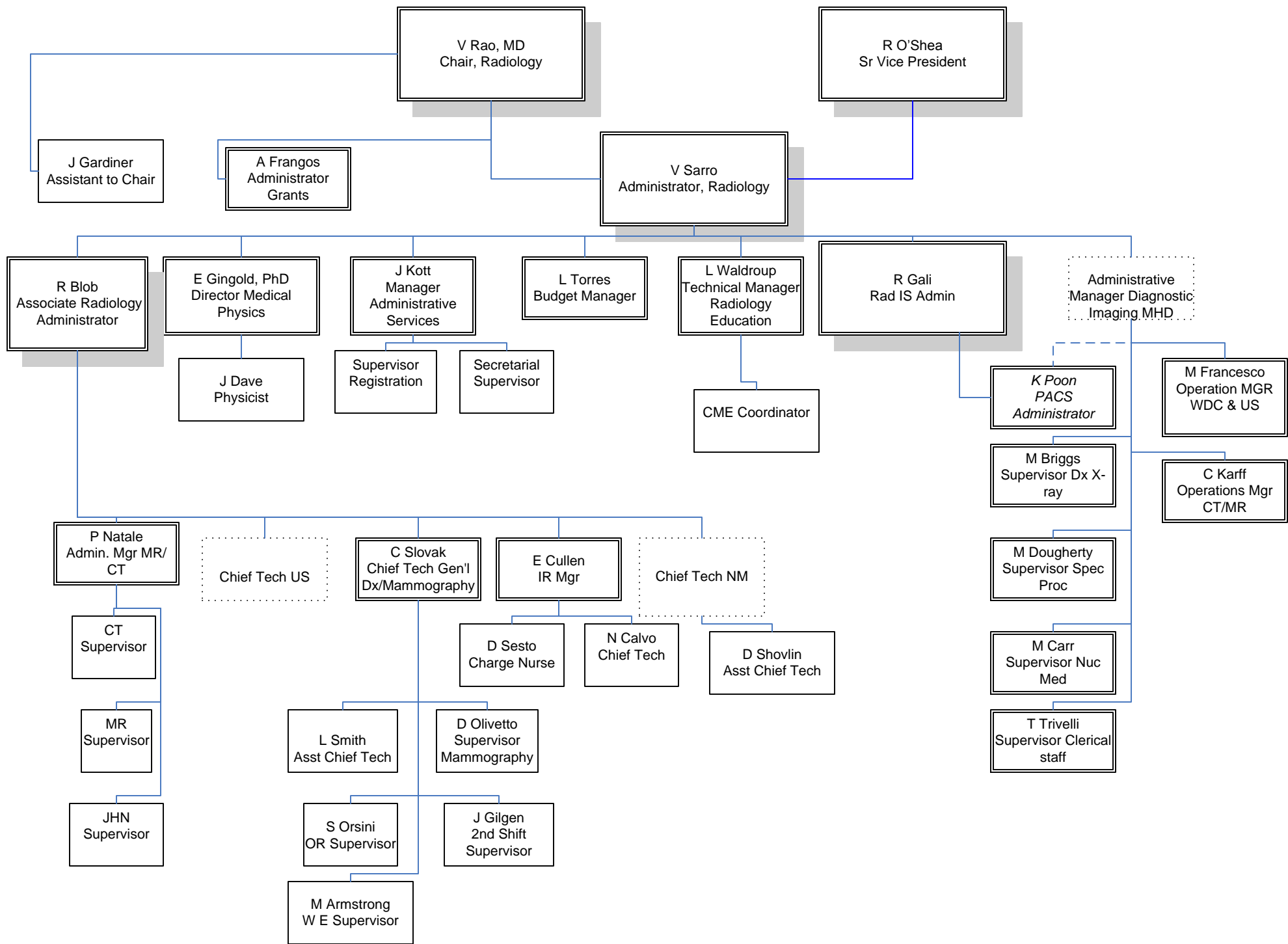
Adeel Azam, M.D.
Fiona Carty, M.D.
Michael Gold, M.D.
Amy Modi, M.D. (finish 08/31/10)
Nirav Patel, M.D. (finish 07/31/10)

NEURO/ENT RADIOLOGY

Michael S. Ferrell, M.D.
Samir E. Kods, M.D.
Pranshu Sharma, M.D.
Kiran S. Talekar, M.D.

Department of Radiology (2010-2011)





STATE OF THE DEPARTMENT

2010-2011

Chairman's Report

Vijay M. Rao, M.D., F.A.C.R.

The past year saw a number of important new developments in our department. Interestingly, several of them were part of new programs in cooperation with other departments that benefited those other departments as much as they did Radiology. (1) We installed a new GE 450W MRI unit at JHN. This is a wide bore 1.5T magnet that allows us to image large patients in a safe hospital environment. Now inpatients at TJUH or JHN who are large or claustrophobic no longer have to be transported to an outpatient imaging facility to have their MRIs done. It is especially important for critical post-op patients at JHN to have a wide bore unit readily available. (2) We enhanced our service for inpatients and ED patients by instituting 24/7 in-house coverage by ultrasound technologists. (3) A new breast screening center opened on the third floor of the MOB. This allowed us to relocate screening mammography from the old and cramped MOB basement to a much more attractive and welcoming new location. In addition to nice amenities for patients, the new center has 2 screening mammography rooms. There are offices for breast surgeons in the adjacent space on the same floor. (4) A new vascular disease center opened on 6 Gibbon. This is a multidisciplinary facility that houses vascular ultrasound, offices for vascular surgeons and vascular medicine physicians. Although there are still some issues that remain to be ironed out, this center is clearly a step in the right direction, as it is important for Jefferson to offer the best possible care for the many patients who have vascular problems. (5) Radiology has had a highly successful 3-way joint venture with the hospital and Outpatient Imaging Affiliates, LLC for many years. Since Jefferson Center City Imaging opened in early 2003, that facility has doubled in size and added much new equipment. The venture also acquired four outpatient MRI centers that are remote from the campus. Now we have decided the time is ripe to expand even more. Much of this past year was spent planning for a new imaging center in East Norriton. We acquired a vacant building, did architectural design for an imaging center, built the center, equipped it, and began a marketing effort. It will be a large and beautiful multimodality center that will offer the latest technology and our department faculty's expertise to patients in that area. At the close of the fiscal year on June 30, 2011, the center was just about to open and I will have much more to say about it in next year's annual report. (6) A very favorable new development pertained to our departmental IT infrastructure. We merged the major components of our information systems with those of the Methodist Hospital Division Department of Radiology. This involved our PACS, Radiology Information System, and our Voice Recognition system for dictations.

In education, we continued our strong reputation as a top institution for young radiology trainees. We received 712 applications for our 9 residency slots. Our fellowship programs continued to be popular. We sponsored a number of CME courses that were well received. Most were in ultrasound but there were others as well. We produce most of these courses right in our department, which helps save costs – an important advantage, since CME in radiology has become highly competitive.

We had a productive year in research as well. Despite an ever-increasing clinical and administrative workload, our faculty was able to produce 261 publications and a large number of presentations at national meetings or at other academic institutions. The details

can be seen elsewhere in this report. We also had 32 research grants from various sources, such as the NIH, foundations, and industry. These produced over \$2.5 million in current year funding.

There are many individuals who contribute to our success – far too many to mention here by name, but I'd like to single out a few. JoAnn Gardner has been a loyal and dedicated administrative assistant who has been a great help to me. Victor Sarro has worked very hard and effectively wearing two hats as both the departmental administrator and business manager. Our vice chairs also play vital roles – Geoffrey Gardiner, M.D. in clinical practice; Chris Merritt, M.D. in quality assurance and performance improvement; Ethan Halpern, M.D. in research; Barry Goldberg, M.D. in strategic planning; and Levon Nazarian, M.D. in education. My thanks go to all of them. Chris Roth, M.D., Vice Chair for Methodist, has again provided outstanding leadership of the Methodist radiology team, and I greatly appreciate his dedication. We continue to get great feedback from the Methodist clinicians who are very pleased with the quality of imaging we provide them.

Many thanks go to Adam Zoga, M.D. and Sandeep Deshmukh M.D. for their leadership in helping build business at our satellite centers. I certainly want to thank all of our division directors, who have to assume large administrative responsibilities, in addition to their clinical and teaching workloads. They are all working very hard and they play crucial role in keeping our department running smoothly.

FACULTY RETENTION, RECRUITMENT AND DEVELOPMENT

In FY'11, four faculty members departed. Both Jeff McCann, M.D. in interventional radiology and Conor Shortt, M.D. in musculoskeletal radiology returned to their home country, Ireland. Amy Austin, M.D. from Methodist took a job closer to home with Atlantic Medical Imaging and Michel Birkhoff, M.D. was recruited to Pennsylvania Hospital where he had completed radiology residency. We recruited four new outstanding faculty members to our department. Alex Sevrakov, M.D. comes to us from Washington University, having completed fellowships in breast imaging and abdominal imaging. Collete Shaw, M.D. comes from Memorial Sloan Kettering, having completed an interventional fellowship. Paras Lakhani, M.D. comes from the University of Pennsylvania, having completed fellowship in oncologic imaging and in informatics. Paul Read, M.D. completed his fellowship in musculoskeletal radiology at Jefferson.

FACULTY DEVELOPMENT, HONORS AND PROMOTIONS

Several faculty members received numerous honors which are listed in the appendix under individual reports. I would like to highlight just a few major accolades: Dr. David Levin received the Distinguished Alumnus Award from Johns Hopkins University School of Medicine. Dr. Barry Goldberg presented the First Albert Einstein Research Recognition Day Lecture on "Research in Ultrasound: From Resident to Professor" at Albert Einstein Medical Center. Dr. Charles Intenzo received the Mentor-of-the-Year Award from the American College of Nuclear Medicine. Dr. Levon Nazarian received the Golden Medal of the Yerevan State Medical University in the Republic of Armenia. Additionally, he was named Editor of the *Journal of Ultrasound in Medicine*. Dr. Vijay Rao served as President of the American Association of Women Radiologists. Drs. Daniel Brown, Geoffrey Gardiner, Jr., Christopher Merritt, Levon Nazarian, and Vijay Rao, were honored as Top Docs by the

Philadelphia Magazine and Dr. Adam Zoga was recognized as a “Top Doc” in Musculoskeletal Imaging by the *US News and World Report*. This is quite an honor roll for our department on the national and international scene.

At Jefferson, several members of our department received faculty awards. Dr. Daniel Brown received the Dean’s Award for Excellence in Faculty Mentoring. Dr. Carin Gonslaves received both the Dean’s Award for Excellence in Education at Jefferson Medical College and the Jefferson Medical College Outstanding Clinician Award.

CLINICAL ACTIVITIES

In 2010-2011, our clinical practice remained strong. At the center city locations, we experienced a 2% growth in overall volume. However, this is an underestimation since the CPT codes for abdominal CT examinations underwent bundling making comparisons with previous years unreliable. Going forward we will start tracking patients instead of CPT codes. Of note was 9.9% growth in interventional procedures, 6.1% growth in ultrasound, 2.6% growth in breast imaging, 5.9% in general and 8.4% growth in MRI. Jefferson Outpatient Imaging joint venture centers had a successful year with 46,970 procedures, and 5.6% growth. It is remarkable to see a 13.2% growth in MRI. These centers are well managed by Outpatient Imaging Affiliates, LLC with their aggressive marketing effort producing positive results.

In **body MR**, several clinical services have grown. Diffusion weighted imaging is now a routine component of most of our exams with Dr. Sandeep Deshmukh taking the lead in working with the diffusion-weighted pulse sequence. Dr. Deshmukh has also been instrumental in updating the protocol for external coil prostate imaging to meet clinical demand. In close collaboration with the gastroenterology pancreas service, a new standardized system for reporting incidental pancreatic cysts has been implemented. Additionally, to improve the clinical needs, a new GE wide-bore 1.5T MRI systems have been installed in Jefferson Hospital for Neurosciences and the East Norriton sites with enthusiastic response from referring physicians.

In **nuclear medicine**, a new program to use Regadenoson (Lexiscan), a selective A2A adenosine receptor agonist, for pharmacologic stress in radionuclide myocardial perfusion imaging has been initiated. Additionally, a mobile PET scanner has been acquired to provide services at Jefferson Outpatient Imaging satellite sites. This will improve our services and clinical revenue.

In **body CT**, the protocol for CT for Emergency Department patients has been modified to allow the technologists to select body and chest cases based on the clinical information and the serum creatinine level without requiring a radiologist’s protocol. This has been very successful and has improved throughput. Point of care creatinine, in which the CT technologists were trained to draw blood for whole blood creatinine tests for outpatients without recent serum creatinine, was implemented at Jefferson Outpatient Imaging. Additionally, the Philips iDose radiation dose reduction system was placed on the 256-slice scanner this year and CT angiography of the abdominal wall prior to DIEP flap surgery is now being performed.

The clinical program in the **musculoskeletal division** has expanded in the past year with the addition of Dr. Suzanne Long, who performs, general musculoskeletal imaging (x-ray, MR, and CT), as well as musculoskeletal ultrasound. This cross coverage has provided some combined programs with Dr. Levin Nazarian in musculoskeletal ultrasound, such as platelet rich plasma injections for musculoskeletal injuries. The expansion of the satellite centers and shared coverage of clinical areas has increased the volume at these satellite sites. There has also been increased biopsy and procedure volume with the addition of an orthopaedic tumor surgeon at the Rothman Institute.

In **ultrasound**, the divisional inventory was expanded this year with two new GE units. Additionally, two of the Philips iU22 imaging units were refurbished and the software in the Sonosite unit used for musculoskeletal studies has been upgraded. Services in the Jefferson Vascular Center are now offered five days a week. The division has also implemented a restructured outpatient schedule in interventional ultrasound to move cases to times that improve patient throughput, e.g., liver biopsies that require several hours to recover have been limited to the morning and early afternoon.

In **interventional radiology**, a new intervention suite was installed and a new Philips ultrasound unit was acquired. Two new programs have shown promising results. The first is injection sclerotherapy of spider veins. The other successful new program is balloon occlusion retrograde transvenous obliteration, a treatment for gastric varices.

In **breast imaging**, a new comprehensive breast cancer tumor board has been instituted in conjunction with the Comprehensive Breast Center. Additionally, the third floor of MOB now houses 2 mammography units which are used for screening. The division of **chest radiology** has implemented gated chest CT to rule out pulmonary embolisms, while the **neuroradiology** division has expanded imaging services for acute stroke.

At **Methodist radiology**, a new interventional radiology suite, mobile MRI unit, Kodak digital radiography system, and nuclear medicine pinhole collimator for thyroid and parathyroid imaging have been acquired. The new pinhole collimator allows for superior image resolution over the standard parallel hole collimators to enhance detection of thyroid nodules as well as parathyroid gland lesions. With new MRI capacity, Methodist radiology has begun to offer MR enterography (which had previously been shunted to TJU) and with the increased functionality of the new interventional suite, fibroid embolization is being offered.

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. In **body CT** the appropriateness of expanding the vital colonoscopy service will be revisited as the value of this technology continues to be recognized. Additionally, dose reduction to Philips 64 slice machines will be expanded.

In **interventional radiology**, plans to begin placement of fiducial markers for stereotactic radiotherapy by radiation oncology. In **breast imaging**, it is hoped that sonoelastography can be added as a clinical service, which can improve the specificity of biopsy

recommendations. In general, the clinical volume in **neuroimaging** should increase to accommodate the increased procedure and expected increased procedure volume at East Norriton imaging center.

The **ultrasound division** has recently formed a committee comprised of supervisors, nurses, and faculty members from the ultrasound division, as well as radiology administration and hospital administration. The focus of the initiative is to improve and standardize the operation of the ultrasound interventional service, thereby creating the ability to expand productivity and improve patient safety.

The new 1.5T MR unit at Jefferson Hospital for the Neurosciences will allow us to further expand the use of MR angiography and MR perfusion imaging in **neuroradiology**. The unit will accommodate increased procedure volume related to increased clinical activity in neurosurgery. In **musculoskeletal imaging**, expansion of the musculoskeletal ultrasound and musculoskeletal interventional procedures at TJU and satellite centers will continue.

Methodist radiology will expand ultrasound services at the new 1300 Wolf Street building to provide coverage to vascular/wound care and gastroenterology clinics. Additionally, the Methodist Vascular Center will open with ultrasound coverage and readings similar to those provided on 6 Gibbon at TJUH.

The **body MR** division will initiate the use of Gadavist to replace Magnevist for most body cases and will substitute for MultiHance for patients with reduced renal function who are examined with gadolinium-enhanced MRI. Cardiac MRI, MR enterography, Eovist-enhanced hepatobiliary MRI, and endorectal coil MRI programs will continue to develop and improve to meet clinical needs.

PHYSICS

The Physics section of the Department of Radiology took a major step forward in our long-term goal to closely monitor patient radiation dose from fluoroscopically-guided interventional procedures. The new Philips Allura angiography systems report two important radiation dose metrics (cumulative air kerma and cumulative dose area product), and the radiologic technologists now record these values in the radiology information system for every interventional radiology procedure. This allows improved dose auditing by the Physics section, using the most accurate indicators available to promptly identify patients at risk for radiation-related deterministic effects. Also in the area of dose monitoring, we are progressing toward CT radiation dose auditing. In collaboration with the Radiology Information Technology section, tools are being developed to allow continuous monitoring of CT doses, and verification of compliance with department scanning protocols.

Several new equipment installations were commissioned by the Physics section this year: Methodist Hospital Radiology's fully automated dual-detector wireless digital radiographic room, an interventional radiology suite in Methodist Hospital Radiology, a flat-panel C-arm fluoroscope at TJUH, the new mammography screening center in MOB, and the new wide-bore MRI in JHN. Additionally, the section supported the beta evaluation of the Philips iDose iterative reconstruction technology which has enabled 30% reduction in radiation dose in some body CT protocols.

Compliance with Joint Commission standards requires annual inspection of lead protective garments and full documentation of these inspections. For improved compliance, the section created a database that allows web-based data entry from any campus location to record lead inspections. Since these inspections occur in many different campus locations, and are performed by a variety of personnel from the Department of Radiology and the Office of Radiation Safety, the new system ensures that lead inspection records are always ready for review by accreditation surveyors.

Research continued on optically-stimulated luminescence (OSL) dosimeter technology for patient dose monitoring.

The Physics section also contributed to the Department's education mission through the Imaging Physics course for residents, resident conferences, medical student teaching, and continuing education seminars for technologists.

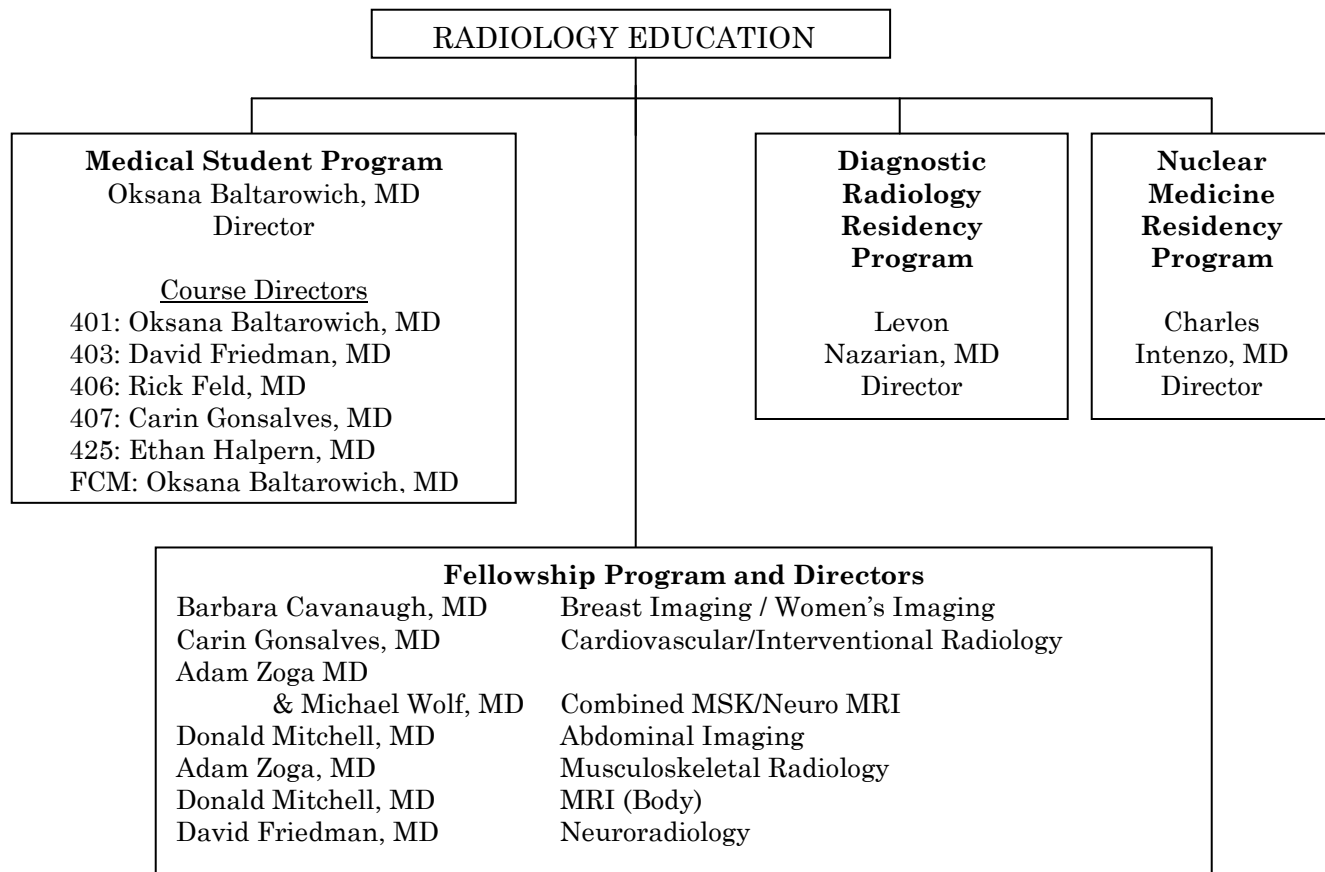
CLINICAL INFORMATICS

The Information Technology section of the Department of Radiology continues to support the clinical needs and mission of the department. Radiology operations at Methodist have been integrated with the operations at the main Thomas Jefferson University Hospital. This past year, the Radiology Information Systems has worked closely with Jefferson Outpatient Imaging in their new Joint Venture at East Norriton center.

Other accomplishments involve installation of Terrarecon and Medis plugin for iSite. The Information System team also worked on the set up and installation of demo work stations for integrated radiology applications.

Future planned initiatives include an upgrade to the voice recognition system (PowerScribe) and iSite to make the application compatible with Internet Explorer 8. Implementation of the data mining application Primordial will be utilized for critical results reporting and key performance indicators. The storage environment for Philips iSite will be virtualized. Additionally, at home faculty reading stations will be identified and implemented and the reading room hardware will be upgraded to support a four-monitor setup, which will allow viewing and display of multiple image series simultaneously to improve productivity.

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 37 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 the written boards and seven of the eight passed 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. Many thanks to Pamela Coyle, Residency Coordinator, for outstanding assistance throughout the year.

Residency Selection: This year we received 712 applications for eight positions and interviewed 68 candidates. We matched all of our positions from among our top candidates under the leadership of Dr. Sandeep Deshmukh, Chairman of the Residency Selection Committee. 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 256 multidetector CT, PET scanning and 3T MR keeps us competitive with other top institutions in the country.

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 residents, Richard Sharpe, M.D., received the RSNA Research and Education Foundation Roentgen Resident Research Award which was presented to him at the resident's graduation dinner. Dr. Sharpe also participated in the RSNA/ARRS/AUR Introduction to Research Program, and Dr. Vahe Zohrabian participated in the Siemens-AUR Radiology Resident Academic Development (SARRAD).

In order to facilitate clinical research among radiology residents, each resident attends a monthly seminar series to review the basics of clinical research study design and implementation prior to presenting his/her own research plan. The seminar series includes eight lectures on hypothesis generation and testing, power analysis, study design, measures of association (sensitivity/specificity/likelihood ratios/predictive value/ROC analysis), bias & confounding, IRB/HIPPA issues, research ethics and health services research. These sessions are structured to comply with the core curriculum on research and statistics for radiology residents developed by the Association of University Radiologists. Additional sessions are devoted to allow second year residents to present their proposed projects in a small group session for comments prior to their required presentations to the entire department of Radiology. The series was conducted jointly by Dr. Ethan Halpern and Ms. Andrea Frangos.

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, save pediatric radiology. Residents spend a total of 3 months at A.I. DuPont and get an outstanding education in pediatric radiology.

Residents Robert Adamo, M.D., Laryssa Hud, M.D., Arvin Kheterpal, M.D., Nancy Laurence, M.D., Jeffrey Mathews, M.D., Nicholas Petruzzi, M.D., Ariel Prager, M.D., Jason Redon, M.D., Richard Sharpe, M.D., and Niti Tank, 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: 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. Six fellows graduated: Dr. Ernesto Blanco went on to St. Christopher's Hospital for Children to pursue a pediatric radiology fellowship; Dr. Howard Boriskin joined Zwanger-Pesiri Radiology Group in Lindenhurst, New York; Dr. Dennis Flamini joined the staff of Southern Delaware Imaging located in Lewes, Delaware; Dr. Kevin Frederick joined the abdominal imaging staff at Geisinger Medical Center in Danville, Pennsylvania; Dr. Hani Sharkey joined the staff at the VA Hospital in San Bruno, California; and Dr. Nachum Stollman joined the radiology staff at the Bryn Mawr Hospital.

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. In addition, we offer the DIRECT pathway program, which is a four year combined Radiology Residency and Vascular and Interventional Radiology Fellowship that can be entered after completing two clinical years of training. The program graduated a Direct Pathway resident, Dr. Jonathan Lieberman, and a one-year fellow, Dr. Neel Patel.

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. Carmine Grieco joined the faculty at Ohio State Medical Center in Columbus, Ohio.

The **Musculoskeletal Fellowship**, under the direction of Adam Zoga, M.D., graduated three outstanding fellows: Dr. Sara Brooks-Sienkiewicz, Dr. Chad Silverberg and Dr. Paul Read. This was a very strong clinical team with academic productivity as well. The musculoskeletal fellowship positions remain highly coveted as we received more than 60 applications for the 2011-2012 positions. From that group, we offered positions to our top choices, Dr. Anton Delpont, Dr. Gabrielle Konin, and Dr. Juan Narvaez.

The **Neuroradiology/ENT Radiology Fellowship**, under the direction of David Friedman, M.D., graduated two one-year fellows, Dr. Michael Ferrell and Dr. Samir Kodsí. Dr. Pranshu Sharma and Dr. Kiran Talekar completed their second year of advanced training in neuroradiology with us at Jefferson.

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. We also participate in clinical trials for innovative imaging of the breast. Dr. Marzban Rad, one of our Jefferson Radiology residency graduates, completed the fellowship and joined the staff at Kaiser Permanente Medical Center in Vallejo, California.

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. Three strong clinical Combined Musculoskeletal/Neuro MRI fellows completed the program: Dr. Michael Gold and Dr. Adeel Azam, and a radiologist trained in Dublin Ireland, Dr. Fiona Carty. Three 2011 graduates of the Jefferson Radiology residency

program will be joining the fellowship program for the 2011-2012 year: Dr. Jeffrey Mathews, Dr. Niti Tank, and Dr. Hema Thaker.

TEACHING PROGRAMS FOR MEDICAL STUDENTS

I am pleased that radiology continues to be included in the core curriculum for sophomore students in the Foundations of Clinical Medicine Course. 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. The radiology topics presented were Introduction to Diagnostic Imaging, Introduction to Chest Radiology, Women's Imaging, and Abdominal Imaging. I am also pleased that the freshman Neurology Block continues to include radiology and wish to thank Dr. Adam Flanders for continuing to teach Neuroradiological Imaging as part of the curriculum.

I wish to acknowledge contributions of Dr. Oksana Baltarowich who continues in the role of Director of Medical Student Education. She has done a spectacular job of restructuring the course and developing new content material. As a result, the RAD 401 course has received rave reviews and has become one of the most desirable electives for senior medical students. Five additional electives are offered by our department, which include Diagnostic Radiology, IR, Neuroradiology, Cross-Sectional Imaging (Ultrasound/CT/MRI), and the newly established Research in Radiology. The radiology electives remained quite popular and were completed by 152 members of the senior class, either here or at an outside institution. The senior students can choose to attend one or more of the five separate electives

The Neuroradiology elective was completed by 7 senior medical students. Electives in Cross-Sectional Imaging and IR were completed by 4 and 3 students, respectively. All of these courses received outstanding reviews from the students. I wish to thank all the course coordinators for their stellar effort in enhancing medical student education – Oksana Baltarowich, M.D., for General Radiology, David Friedman, M.D., for Neuroradiology, Rick Feld, M.D., for Cross-Sectional Imaging, Carin Gonsalves, M.D., for IR, and Ethan Halpern, M.D., for Research in Radiology.

This past year we have expanded our participation in the education of Jefferson Medical College medical students. We hosted a number of first year students, who have participated in the Jefferson AMA Shadowing program. Additionally, we have accepted an invitation from the third year Internal Medicine Clerkship Director, Dr. Gretchen Diemer, to give a monthly Chest Radiology lecture to medical students rotating through the Internal Medicine Clerkship at Thomas Jefferson University Hospital. Similarly, at the invitation of the third year Surgery Clerkship Director, Dr. Gerard Isenberg, we provide an Introduction to Abdominal Imaging lecture as part of their curriculum four times per year.

CONTINUING MEDICAL EDUCATION PROGRAMS

Radiology Grand Rounds and Radiology Research Conferences: Twenty-two weekly conferences were held during the 2010-2011 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.

Third Annual David C. Levin Lecture: The Department was pleased to present the endowed lecture in honor of Dr. David Levin, Professor Emeritus and former chair of the Department on September 14, 2010. The lecture titled: “Characteristics of a High Performing Radiology Department” was given by Normal J. Beauchamp, Jr., M.D., M.H.S. Dr. Beauchamp is Professor and Chair of the Department of Radiology and Professor of Industrial and Systems Engineering and Neurological Surgery at the University of Washington in Seattle, Washington.

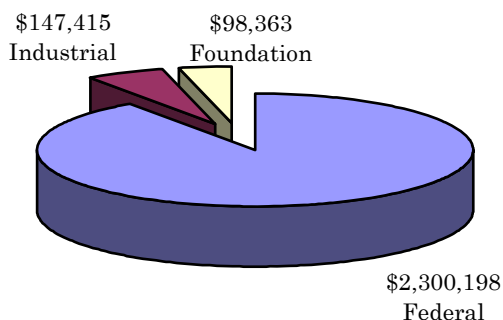
Jefferson Ultrasound Research and Education Institute (JURED): The Jefferson Ultrasound Research and Education Institute, under the leadership of Barry B. Goldberg, M.D., continued its educational programs with more than 40 courses offered in all aspects of ultrasound. The annual Leading Edge meeting, 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, ultrasound contrast agents, ultrasound in emergency medicine, critical care, and anesthesiology and requisites.

RESEARCH ACTIVITIES

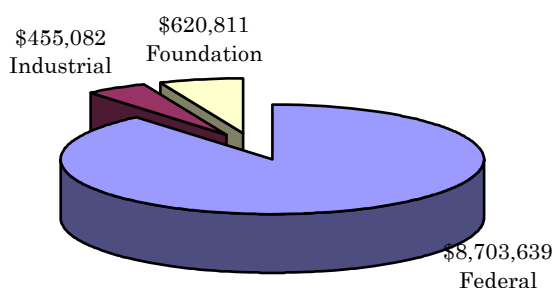
Although the demands of clinical activities continue to increase, as indicated in our clinical productivity, the department’s research productivity remained strong. There were 19 NIH or other federal grants active during the year, in addition to 3 foundation or medical society grants, and another 10 industrial grants. As a group, these grants brought in total current year funding of \$2,545,976 including \$2,103,408 in direct support and \$442,569 in indirect costs. This is an increase of over 60% from fiscal year ‘10 (from \$1,554,226). We had 261 publications in the medical literature (including journal articles, books and book chapters, and published abstracts), up from 228 the past fiscal year.

The Judy Dubbs Memorial Research Award was presented to Sandeep Deshmukh, M.D. Dr. Deshmukh’s expertise and research interests are in magnetic resonance imaging of the abdomen. His work on “Characteristics of Different Tissue Encountered in Abdominal MRI: Physical Basis and Diagnostic Implications” was published in *Radiographics* 2011. This award is given to a junior faculty member within five years of appointment for outstanding scholarly work.

2010-2011 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. The facility remained active and enhanced its services that included optical imaging. A new part-time research technologist was hired in October 2010 to help operate the optical imaging equipment. In early January 2011, the facility was relocated to 474 Jefferson Alumni Hall. During the academic year, the facility serviced eight investigators. Three new NIH grants were obtained in which animal imaging shall play a vital role. The work carried out in the imaging facility resulted in several new publications in peer-reviewed journals. Investigations including molecular imaging at the Jefferson facility were presented at many national and international conferences resulting in the publication of more than a dozen of abstracts.

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, Pediatrics, and the Jefferson Hospital of Neurosciences, the program has been productive in the investigation of lead poisoning, multiple sclerosis, epilepsy, glaucoma, 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 research efforts of his NIH-funded R21 grant into secondary lymph node identification with an ultrasound contrast agent. Dr. Forsberg continued his Challenge Grant funded by the NIH under the ARRA mechanism and to complete the human trial on pressure estimation for portal hypertension. He also continued his NIH (NCI) R01 study of a clinical trial of subharmonic breast imaging in 450 patients, with a TJU as the primary site and University of California San Diego as a secondary site. Dr. Halpern completed his clinical trial on prostate cancer detection with contrast-enhanced ultrasound following pre-treatment with Dutasteride supported by the NIH. Dr. Liu collaborated with the Department of Anesthesiology in both human and clinical trials investigating the use of a new glucose system. Dr. Nazarian continued his work in musculoskeletal ultrasound diagnosis and therapy. Dr. Goldberg continues to serve as the principal investigator of a Phase III clinical trial of SonoVue (an ultrasound contrast agent) for liver lesion characterization funded by Bracco. In this study, TJU continues to lead the country in recruitment. Finally, one of Dr. Forsberg post-doctoral fellows, Dr. John Eisenbrey, has secured a highly sought after Department of Defense training grant, which will provide his funding for the next several years and will develop post-processing algorithms for subharmonic breast imaging under the guidance of Dr. Forsberg.

In **breast imaging**, recruitment continued on an NIH trial that is a collaborative effort between breast imaging and Drs. Thakur and Intenzo in **nuclear medicine** to examine Cu-64 based PET tracer in breast cancer that binds to the VPAC1 receptor found in breast epithelial cells. Dr. Intenzo continued two PET trials sponsored by the American College of Radiology Imaging Network. One study is examining the use of 18-Fluorothymidine (FLT) PET for monitoring response of invasive ductal breast carcinoma to neoadjuvant therapy and the second trial is evaluating the use of FDG-PET for staging head and neck cancer. **Nuclear medicine** also plays a key role in an industry-funded clinical trials using combinations of chemotherapy and a radiolabeled therapeutic monoclonal antibody in patients

In **body MRI**, the division continued to evaluate the new internal radiology system for reporting hepatocellular carcinoma on MRI. The division also has been collaborating with the Division of Gastroenterology for identifying hepatorenal syndrome on pre-contrast MR. Both **musculoskeletal imaging** and **neuroradiology** have been extensively published and presented research projects over the past year. Additionally, in **neuroradiology**, 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 began his work on a study funded by the Department of Defense to evaluate the use of novel MR biomarkers to predict outcome in spinal cord injury and primary glial brain tumors.

In **body CT**, Dr. Halpern continued his investigation in the cost-effectiveness of coronary CT angiography as a triple-rule-out exam. The **interventional radiology division** continue their work with Dr. Sato in immunoembolization for uveal melanoma. Dr. Jeffrey McCann completed work on a registry for AngioSeal devices and Dr. Daniel Brown continues investigate the efficacy of the PressureWire™ Aeris technology to quantitatively measure treatment endpoints for chemoembolization.

Our **health services research** group (Drs. Vijay Rao, David Levin, Laurence Parker, Richard Sharpe, Jr., and Jessica Kobil and Ms. Andrea Frangos) 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.

OPPORTUNITIES FOR EXTRAMURAL FUNDING

Although federal funding continues to be competitive, the department continues to actively seek funding. Overall, the department has 10 pending NIH grant proposals, which are listed in Table 2 of the appendix. There are also six pending industry grant. 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 a collaborative relationship with Philips Medical Systems North America for evaluation and optimization of imaging equipment and techniques. The partnership has allowed us to optimize many of our imaging techniques with improvements in imaging protocols and analysis, thereby improving patient care. Additionally, many pilot grants have been awarded by Lantheus Medical to study expanded use of ultrasound contrast agents.

One of the goals of the department is to mentor the junior faculty in research and many of the recent recruits have taken an interest in advancing the research mission of the department.

APPENDIX I

PUBLICATIONS

Journal Articles:

1. Aigner F, Pallwein L, Junker D, Schäfer G, Mikuz G, Pedross F, Mitterberger MJ, Jaschke W, Halpern EJ, Frauscher F: Value of real-time elastography targeted biopsy for prostate cancer detection in men with prostate specific antigen 1.25 ng/ml or greater and 4.00 ng/ml or less. *J Urol* 2010; 184(3):913-917.
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APPENDIX II

FORMAL SCIENTIFIC PRESENTATIONS

OKSANA BALTAROWICH, M.D.

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| April 8-9, 2011 | Michigan Sonographers' Society 35 th Annual Spring Symposium on Diagnostic Ultrasound, Novi, MI <ul style="list-style-type: none">• "Sonography of the pancreas and spleen"• "Sonography of myometrial disorders"• "Pitfalls in imaging ectopic pregnancy" |
| April 14-17, 2011 | American Institute of Ultrasound in Medicine 2011 Annual Convention, New York, NY <ul style="list-style-type: none">• "Non-gynecological ultrasound findings on pelvic scans: The radiologist's role"• "Sonography of myometrial disorders"• "Ultrasound of adnexal masses" |
| May 1-6, 2011 | American Roentgen Ray Society 111 th Annual Meeting, Chicago, IL <ul style="list-style-type: none">• "2011 case-based approach to diagnosis: A case-based imaging review course: Ultrasound gynecology" |
| May 10-13, 2011 | The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ <ul style="list-style-type: none">• "Ultrasound general imaging – The requisites"• "Abdominal ultrasound – Part I (liver, gallbladder, and bile ducts)"• "Abdominal ultrasound – Part II (pancreas and spleen)"• "Women's imaging symposium – Advances in OB/GYN"• "Non-gynecological ultrasound findings on pelvic scans" |
| June 23, 2011 | Ukrainian Medical Association of North America XLI Scientific Convention, Philadelphia, PA <ul style="list-style-type: none">• "Radiation from medical imaging: What the doctor needs to know" |

DANIEL BROWN, M.D.

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| January 15-16, 2011 | The Third Annual Symposium on Clinical Interventional Oncology, Miami, FL <ul style="list-style-type: none">• "Sorting through treatment choices for liver metastases"• "The amazing case: Reality TV from BCVI"• "Cone beam CT: Way more radiation, way more time, and minimally more information"• "What's new in ablation therapies: Are they ready for prime time?" |
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| February 10-13, 2011 | <p>Y90: Are YoU Ready? sponsored by the Society of Interventional Radiology, Scottsdale, AZ</p> <ul style="list-style-type: none"> • “State of the art: Treatment strategies for liver dominant metastatic disease Y90: Are you ready?” • “Mitigating complications of Y90: Are you ready?” • “Integrating trainees: Unified multispecialty practice Y90: Are you ready?” |
| March 26-31, 2011 | <p>36th Annual Scientific Meeting of the Society of Interventional Radiology, Chicago, IL</p> <ul style="list-style-type: none"> • “Definitive and palliative interventional oncologic therapies” (case-based review) • “Pancreatico-hepatobiliary interventions” (workshop) • “Practice management/quality improvement” (moderator) • “Advanced tumor ablation” (workshop) • “Introduction to Y90” (workshop) • “Optimizing work flow in interventional radiology using 6 sigma/lean principles” (poster) • “Early arterial stasis preventing complete dose delivery during resin based 90Y radioembolization: Incidence and preliminary outcome” • “Toxicities following radioembolization with Y90 SIRSpheeres: Incidence and contributing factors at a single center” • “Predictability of ablation margin at percutaneous renal cryoablation based on early iceball size” (poster) • “Radiation emission from patients treated with selective hepatic radioembolization using 90Y microspheres: Are contact restrictions necessary?” • SIR film panel (plenary session faculty) |
| June 9-12, 2011 | <p>World Conference on Interventional Oncology (WICO 2011), New York, NY</p> <ul style="list-style-type: none"> • “Morbidity and mortality” (moderator) |

SANDEEP DESHMUKH, M.D.

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| November 28-
December 3, 2010 | <p>96th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL</p> <ul style="list-style-type: none"> • “Ultrasound of the neck: Beyond nodules and thyroid cancer” |
| May 10-13, 2011 | <p>The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ</p> <ul style="list-style-type: none"> • “Non-vascular and incidental findings in the vascular lab” • “MRI as a problem solver in OB-GYN imaging” |

DAVID ESCHELMAN, M.D.

- June 3-7, 2011 American Society of Clinical Oncology Annual Meeting, Chicago, IL
- “The results of a randomized phase II study using embolization with or without granulocyte-macrophage colony-stimulating factor (GM-CSF) in uveal melanoma patients with hepatic metastasis” (poster)

RICK FELD, M.D.

- May 10-13, 2011 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ
- “Interventional ultrasound including thyroid biopsy: A practical guide”
 - “Thyroid elastography”

STEVEN FINDEN, M.D., D.D.S.

- October 6-10, 2010 American Society of Head and Neck Radiology 44th Annual Meeting, Houston, TX
- “Common dental findings: What the radiologist needs to know”

ADAM FLANDERS, M.D.

- September 30-
October 3, 2010 3rd Intensive International Diagnostic Courses in Davos Course in Greece, Diseases of the Brain, Head and Neck, Spine, Anavyssos, Greece
- “Spinal trauma and spinal cord injury”
 - “Degenerative spine”
- November 28-
December 3, 2010 96th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- “Coordination of multicenter image evaluation using open source tools and the annotation and imaging markup (AIM) data service”
 - “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 – SIIM)”
 - “Electronic teaching files (Informatics: Advances) – General concepts & basic MIRC”
- March 17-18, 2011 10th Annual Cerebrovascular Update, sponsored by Jefferson Medical College, Philadelphia, PA
- “Modern imaging approaches in stroke management”
- May 1-6, 2011 American Roentgen Ray Society 111th Annual Meeting, Chicago, IL
- “Categorical course: Imaging of the active lifestyle” (co-chair)
 - “Neuroradiology injuries associated with sports” (moderator)
 - “Sports related cervical spinal injuries – Use of MRI”

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| May 6, 2011 | 2 nd Annual Navigating Spinal Care, Cervical Spinal Disorders,
sponsored by Thomas Jefferson University Hospital, Philadelphia,
PA <ul style="list-style-type: none"> • “Controversies in cervical spine imaging” |
| June 2-5, 2011 | Society for Imaging Informatics in Medicine 2011 Annual Meeting,
Washington, DC <ul style="list-style-type: none"> • “Open source plug-fest: The RSNA/MIRC software project” • “Making advanced visualization work for you. Advanced visualization: From roadblocks to solutions” (co-chair/moderator) • “Making advanced visualization work for you. Advancing advanced visualization: What are the vendors’ perspectives?” (co-chair/moderator) • “The ghost of radiology future: A glimpse into the coming era – Live demonstration” (performer) • “Imaging in the sub-specialties” (moderator) • “Sunday learning series: Tools of the trade learning labs” (co-chair) |
| June 4-9, 2011 | American Society of Neuroradiology 49 th Annual Meeting, Seattle,
WA <ul style="list-style-type: none"> • “Synaptic junction workshop. MIRC 2.0 and shared teaching files” • “Excerpta extraordinare: Intramedullary sequestration of disk fragment” • “The foundation of the ASNR symposium 2011 neuroradiology of trauma: Roundtable discussion of neuroradiology in trauma” (panelist) • “ASSR programming: Comprehensive spine review: Tumor, infection and traumatic injury of the spine” (co-moderator) • “Methodology for multireader assessment of MR imaging features of gliomas in clinical trials” |

FLEMMING FORSBERG, PH.D.

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| July 18-22, 2010 | 52 nd Annual Meeting of the American Association of Physicists in
Medicine, Philadelphia, PA <ul style="list-style-type: none"> • “Subharmonic imaging and pressure estimation” |
| September 30-
October 1, 2010 | 25 th Annual Advances in Contrast Ultrasound – ICUS Bubble
Conference, Chicago, IL <ul style="list-style-type: none"> • “In vivo cardiac subharmonic pressure estimation” |
| October 11-14, 2010 | IEEE International Ultrasonics Symposium, San Diego, CA <ul style="list-style-type: none"> • “Vascular architecture in subharmonic breast images: A comparative study” |
| November 28-
December 3, 2010 | 96 th Scientific Assembly and Annual Meeting of the Radiological
Society of North America, Chicago, IL <ul style="list-style-type: none"> • “Feasibility of parametric imaging using subharmonic signals from US contrast agents in patients with breast masses” |

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| April 14-17, 2011 | <p>American Institute of Ultrasound in Medicine 2011 Annual Convention, New York, NY</p> <ul style="list-style-type: none"> • “Contrast enhanced maximum intensity projection ultrasound imaging for assessing angiogenesis in murine glioma and breast tumor models” |
| May 10-13, 2011 | <p>The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ</p> <ul style="list-style-type: none"> • “3D subharmonic imaging” • “Noninvasive portal vein pressure estimation in humans” |
| June 9-12, 2011 | <p>World Conference on Interventional Oncology (WICO 2011), New York, NY</p> <ul style="list-style-type: none"> • “Contrast ultrasound and elastography for interventional procedures” |
| June 13-15, 2011 | <p>Ultrasonic Imaging and Tissue Characterization Symposium, Washington, DC</p> <ul style="list-style-type: none"> • “On the utility of subharmonic contrast microbubble signals” |

DAVID FRIEDMAN, M.D.

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| October 21-24, 2010 | <p>Neuroradiology Review, sponsored by the University of Pennsylvania Medical Center, Philadelphia, PA</p> <ul style="list-style-type: none"> • “Infectious diseases of the brain and its linings” |
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ERIC GINGOLD, PH.D.

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| July 18-22, 2010 | <p>52nd Annual Meeting of the American Association of Physicists in Medicine, Philadelphia, PA</p> <ul style="list-style-type: none"> • “Radiation dose from multi-needle CT-guided cyroablation of abdominal tumors” |
| November 28-
December 3, 2010 | <p>96th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL</p> <ul style="list-style-type: none"> • “Low-dose performance of optically-stimulated luminescence (OSL) dosimeters for applications in diagnostic radiology” |

BARRY GOLDBERG, M.D.

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| September 30-
October 1, 2010 | <p>25th Annual Advances in Contrast Ultrasound – ICUS Bubble Conference, Chicago, IL</p> <ul style="list-style-type: none"> • “Phase III liver mass characterization” |
| October 22-24, 2010 | <p>20th Annual Society of Radiologists in Ultrasound Meeting</p> <ul style="list-style-type: none"> • “Ultrasound: Past, present and future” • “The approval of ultrasound contrast agents for non-cardiac uses: Current status” |

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| November 15, 2010 | United States Food and Drug Administration Meeting, Washington, DC
<ul style="list-style-type: none"> • “New uses of ultrasound contrast agents” |
| November 28-
December 3, 2010 | 96 th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
<ul style="list-style-type: none"> • “Contrast-enhanced US detection and characterization of sentinel lymph nodes in a melanoma swine model” (poster) |
| April 14-17, 2011 | American Institute of Ultrasound in Medicine 2011 Annual Convention, New York, NY
<ul style="list-style-type: none"> • “CEUS – Clinical uses” • “Contrast-enhanced US: Clinical uses – CEUS uses with inflammatory bowel disease, vascular imaging and lymphatic imaging” • “Contrast-enhanced US imaging of sentinel lymph nodes after peritumoral administration of Sonazoid in a melanoma tumor animal model” |
| May 10-13, 2011 | The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ
<ul style="list-style-type: none"> • “Lymphatic applications of CEUS” • “Advances in ultrasound imaging” |
| May 25, 2011 | 2011 Albert Einstein Research Recognition Day Lecture, Department of Medicine Grand Rounds, Albert Einstein Medical Center, Philadelphia, PA
<ul style="list-style-type: none"> • “Research in ultrasound from resident to professor” |

CARIN GONSALVES, M.D.

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| June 9-12, 2011 | World Conference on Interventional Oncology (WICO 2011), New York, NY
<ul style="list-style-type: none"> • “Immunoembolization of uveal melanoma liver metastases using GM-CSF” |
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ANGELA GOPEZ, M.D.

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| October 22-24, 2010 | American College of Radiology Categorical Course, Musculoskeletal MR, Washington, DC
<ul style="list-style-type: none"> • “MRI of the collateral and cruciate knee ligaments” • “MRI of the ankle – Bone and joints” • “MRI of the ankle- Tendons and ligaments” |
| March 11, 2011 | Department of Radiology Grand Rounds, Geisinger Medical Center, Danville, PA
<ul style="list-style-type: none"> • “MRI of the elbow” • “MR imaging of sports injuries” |

RICHARD GORNIK, M.D.

- May 1-6, 2011 American Roentgen Ray Society 111th Annual Meeting, Chicago, IL
- “Logger: A PACS plug-in for communication and tracking of discrepancies between overnight resident and attending radiologist reports”
 - “Detection of mesial temporal sclerosis in patients with epilepsy: Texture analysis of coronal T2 MR images” (exhibit)

ETHAN HALPERN, M.D.

- November 28-
December 3, 2010 96th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- “Flash replenishment MIP imaging with contrast-enhanced ultrasound identifies high volume/high grade prostate cancer”
 - “Comparison of contrast-enhanced ultrasound and targeted biopsy of the prostate to whole mount radical prostatectomy specimens for detection of prostate cancer”
 - “Toward a standardized training curriculum in cardiac imaging”
 - “Diagnosis of coronary stenosis with CT angiography: Comparison of automated computer diagnosis with expert readings”
 - “Evaluation of myocardial enhancement during coronary CT angiography for the diagnosis of acute coronary syndrome”
 - “Radiology residency training requirements for cardiac imaging”
 - “Dedicated cardiac CT and triple rule-out studies: Risks and benefits”
- February 10-11, 2011 Hebrew University Radiology Conference, Hadassah Hospital, Jerusalem, Israel
- “Coronary CT anatomy”
 - “Advances in cardiac CT”
- March 16, 2011 Department of Radiology Grand Rounds, Mount Sinai Medical Center, New York, NY
- “Ultrasound advances in the diagnosis and treatment of prostate cancer: Ultrasound contrast agents and elastography”
 - “Resident cases: Cardiac CT”
- March 30, 2011 Department of Radiology Grand Rounds, Albert Einstein Medical Center, Philadelphia, PA
- “Role of cardiac CT in the management of chest pain in the ED”
- May 10-13, 2011 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ
- “GU sonography of the urinary bladder, scrotum and prostate”
 - “Kidneys, adrenal glands and retroperitoneum”
 - “Experience with contrast-enhanced ultrasound targeted prostate biopsies at TJU”
 - “Prostate elastography – 2011”

GEORGE PAUL HOBBS, M.D.

- November 15, 2010 South Jersey Healthcare Musculoskeletal Imaging Symposium,
Vineland, NJ
- “MRI of the Lisfranc interval and plantar plates”

CHARLES INTENZO, M.D.

- November 28-
December 3, 2010 96th Scientific Assembly and Annual Meeting of the Radiological
Society of North America, Chicago, IL
- “Discordant radioactive tracer distribution pattern between Tc-99m MAA and Y-90 liver SPECT in the treatment of hepatic malignancy”
 - The use of dual-time FDG-PET/CT imaging in the follow-up of pancreatic cancer”

CINDY ISAACSON-FINDEN, M.D.

- November 28-
December 3, 2010 96th Scientific Assembly and Annual Meeting of the Radiological
Society of North America, Chicago, IL
- “Chest case of the day”

ALFRED KURTZ, M.D.

- January 11, 2011 Visiting Professor, Department of Radiology, Bryn Mawr Hospital,
Bryn Mawr, PA
- “Part I – Obstetrical/gynecologic ultrasound board review case”
- March 17, 2011 Visiting Professor, Department of Radiology, Bryn Mawr Hospital,
Bryn Mawr, PA
- “Part II – Obstetrical/gynecologic ultrasound board review case”
- May 10-13, 2011 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas
Jefferson University Hospital, Atlantic City, NJ
- “Ultrasound general imaging: The requisites” (moderator)
 - “Obstetrics part I (1st trimester, ectopic pregnancy)”
 - “Obstetrics part II (2nd and 3rd trimester)”
 - “Gynecologic ultrasound”

SONG LAI, PH.D.

- May 7-13, 2011 International Society for Magnetic Resonance in Medicine 19th
Annual Scientific Meeting and Exhibition, Montreal, Canada
- "Diagnosing Alzheimer disease in individuals: Volumetric imaging"

DAVID LEVIN, M.D.

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| October 9, 2010 | 95 th Annual Meeting of the Pennsylvania Radiological Society, Pittsburgh, PA <ul style="list-style-type: none">• “Nighthawks and other teleradiology ventures – Good or bad for radiology?”• “Turf battles in radiology – Strategy and tactics for winning” |
| October 19, 2010 | Visiting Professor, Department of Radiology, University of Cincinnati, Cincinnati, OH <ul style="list-style-type: none">• “The pathophysiology of coronary artery disease as reflected on coronary CT angiography”• “The appropriateness (or lack thereof) of today’s imaging” (the 12th Annual Harold Schwinger Lecture) |
| October 27-31, 2010 | 25 th Annual Economics of Diagnostic Imaging 2010: National Symposium: Practical Solutions for Turbulent Times, Arlington, VA <ul style="list-style-type: none">• “Turf battles in radiology: Strategy and tactics for winning”• “Self-referral and its relationship to overutilization of imaging: What does the evidence show?”• “Preauthorization vs. radiology order entry: How should radiologists view these?” |
| November 28-
December 3, 2010 | 96 th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none">• “Addressing threats to radiology: Self-referral, turf, and utilization control”• “Decision analytic model for evaluation of coronary artery disease with stress ECG, stress echocardiography, radionuclide stress perfusion imaging, and CT angiography: Impact of coding and reimbursement changes in the 2010 Medicare fee schedule”• “Recent slowing of growth in utilization of noninvasive diagnostic imaging in the Medicare population: Is it finally coming under control?”• “Economic relevance of coronary CTA”• “The surprising drop in utilization of coronary CT angiography (CCTA) compared with radionuclide myocardial perfusion imaging (MPI)” |
| May 1-6, 2011 | American Roentgen Ray Society 111 th Annual Meeting, Chicago, IL <ul style="list-style-type: none">• “Understanding and coping with radiology benefits management companies” |
| June 1-2, 2011 | Visiting Professor, Department of Radiology, Mayo Clinic, Rochester, MN <ul style="list-style-type: none">• “Self-referral in imaging: What is it doing to our health care system?”• “The commoditization of radiology and what to do about it”• “The appropriateness (or lack thereof) of today’s imaging”• “Radiology’s future: The good news and the bad” |

- June 14, 2011 4th Annual Edward H. Smith Lecture, University of Massachusetts Medical School, Worcester, MA
- “Radiology’s future: The good news and the bad”

JI-BIN LIU, M.D.

- March 1, 2011 The Drexel-Jefferson Academic Alliance Course for Biomedical Engineering, Philadelphia, PA
- “Interventional and intraoperative ultrasound: A review”
 - “Laparoscopic ultrasound”
- April 14-17, 2011 American Institute of Ultrasound in Medicine 2011 Annual Convention, New York, NY
- “Endoluminal ultrasound-guided transureteroscopic biopsy and drainage” (poster)
- May 20-23, 2011 XVth World Congress of Cardiology, Echocardiography & Allied Imaging Techniques, Wuhan, China
- “Contrast-enhanced subharmonic imaging”
 - “Strategies for research project application and journal paper publication”

SUZANNE LONG, M.D.

- May 1-6, 2010 American Roentgen Ray Society 111th Annual Meeting, Chicago, IL
- “Sports-related injury of the wrist”
 - “Vertebral augmentation: Utilization and provider distribution in the U.S. 2001-2009”

CHRISTOPHER MERRITT, M.D.

- October 22-23, 2010 Maximizing Value in Radiology through Quality and Safety Improvements, American College of Radiology, Phoenix, AZ
- “Image interpretation discrepancy rates measured by external peer review”
- May 1-6, 2010 American Roentgen Ray Society 111th Annual Meeting, Chicago, IL
- “Image interpretation discrepancy rates measured by external peer review”
- May 10-13, 2011 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ
- “Physics”
 - “BIRADS lexicon – Diagnostic criteria”
 - “Understanding imaging”
 - “Understanding Doppler”
 - “What Doppler can and cannot do”

DONALD MITCHELL, M.D.

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| March 4, 2011 | Department of Radiology Resident Conference, Hahnemann University Hospital, Philadelphia, PA <ul style="list-style-type: none">• “Abdominal MRI cases” |
| March 25, 2011 | International Society for Magnetic Resonance in Medicine on the Road 2011 Case-Based Series, Miami, FL <ul style="list-style-type: none">• “Abdominal MRI cases” |
| May 7-13, 2011 | International Society for Magnetic Resonance in Medicine 19 th Annual Scientific Meeting and Exhibition, Montreal, Canada <ul style="list-style-type: none">• “Artifacts and pitfalls: Radiologist's perspective”• “Liver MRI: Protocol optimization” |

WILLIAM MORRISON, M.D.

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| August 12, 2010 | Visiting Lecturer, Armed Forces Institute of Pathology, Washington, DC <ul style="list-style-type: none">• “MRI imaging of the elbow” |
| August 29-
September 1, 2010 | 19 th Annual Current Issues of Magnetic Resonance Imaging in Orthopaedics and Sports Medicine, San Francisco, CA <ul style="list-style-type: none">• “How I approach the upper extremity”• “Lower extremity osteomyelitis”• “Panel discussion: Ankle and foot “• “How I approach the lower extremity” |
| September 29-
October 2, 2010 | International Skeletal Society Annual Meeting, Athens, Greece <ul style="list-style-type: none">• “Commonly missed meniscal abnormalities” |
| October 7, 2010 | Visiting Lecturer, Armed Forces Institute of Pathology, Washington, DC <ul style="list-style-type: none">• “MRI imaging of the elbow” |
| October 23-24, 2010 | Musculoskeletal Imaging Boot Camp, Atlanta, GA <ul style="list-style-type: none">• “Shoulder interactive cases”• “Diabetic foot”• “Foot/ankle interactive cases”• “Hip/pelvis (non FAI)”• “Cervical spine” |
| November 8-10, 2010 | 2010 American College of Rheumatology/Association of Rheumatology Health Professionals Annual Scientific Meeting, Atlanta, GA <ul style="list-style-type: none">• “Musculoskeletal imaging workshop” |
| November 28-
December 3, 2010 | 96 th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none">• “Case based review: Lower extremity”• “Musculoskeletal radiology series: Sports-related musculoskeletal injuries ‘foot and ankle” |

December 14, 2010	<p>Department of Radiology Grand Rounds, Georgetown Medical Center, Washington, DC</p> <ul style="list-style-type: none"> • “Provocative musculoskeletal MR imaging”
January 31- February 1, 2011	<p>American Diabetes Association and American Podiatric Medical Association International Task Force on Charcot Arthropathy, Paris, France</p> <ul style="list-style-type: none"> • “Imaging of the Charcot foot”
February 13-18, 2011	<p>15th Annual Snowmass Clinical MRI: New Essentials – What You Need to Know 2011, Snowmass Village, CO</p> <ul style="list-style-type: none"> • “MRI of the knee” • “MRI of the hip” • “MRI of the wrist and hand”
March 3-5, 2011	<p>13th Annual Hand Surgery Symposium – Office Twitter: Strategies for Success in the Business of Hand and Upper Extremity Care, Philadelphia, PA</p> <ul style="list-style-type: none"> • “Imaging of the elbow – X-ray, arthrogram, MRI”
March 21-24, 2011	<p>Musculoskeletal Radiology in the Mountains, CME Course, Snowmass, CO</p> <ul style="list-style-type: none"> • “Optimization of musculoskeletal MRI” • “MRI of fractures and stress” • “MRI of the forefoot “ • “MRI of the ankle” • “MRI of the knee menisci: Tricks and tips” • “Provocative MR imaging of the musculoskeletal system”
March 24-27, 2011	<p>Musculoskeletal Imaging – Mixing Sun, Sand and Knowledge: Hot Topics and Burning Issues by the Beach, Naples, FL</p> <ul style="list-style-type: none"> • “MSK Radiology” (course director) • “MSK MRI artifacts: How to use them and avoid them” • “Knee menisci: Tricks and tips” • “Imaging of shoulder instability” • “HIP – FAI / adult hip dysplasia” • “MSK pathology on MRI: The ‘unified body theory” • “MRI of sports injuries in high performance athletes” • “MR arthrography” • “MRI of the diabetic foot” • “How I take a case: Elbow/wrist” • “How I take a case: Hip/ankle”
March 30, 2011	<p>Visiting Lecturer, Armed Forces Institute of Pathology/American Institute for Radiologic Pathology, Silver Springs, MD</p> <ul style="list-style-type: none"> • “MRI of the elbow”
April 16-17, 2011	<p>Visiting Professor, Department of Radiology, Queen Mary Hospital, Hong Kong, China</p> <ul style="list-style-type: none"> • “Provocative MSK MR imaging: Fad or future” • “A unified body approach to musculoskeletal radiology” • “MRI of shoulder impingement and the rotator cuff” • “Imaging of shoulder instability”

- “MRI of the elbow”
 - “MRI of the wrist and hand”
 - “MRI of sports injuries in high performance athletes”
 - “Musculoskeletal interventional procedures”
 - “MRI of the knee menisci: Tricks and tips”
 - “MRI of knee ligaments and tendons”
 - “MRI of the hip”
 - “Imaging of adult hip dysplasia and femoralacetabular impingement”
 - “MRI of degenerative disc disease and nomenclature”
 - “MRI of the ankle”
 - “MRI of cartilage”
- April 22-23, 2011 Musculoskeletal MR, American College of Radiology CME Course, Reston, VA
- “Cruciates and collateral ligaments”
 - “Ankle tendons and ligaments”
 - “Bone and cartilage of the ankle/foot”
- May 1-6, 2011 American Roentgen Ray Society 111th Annual Meeting, Chicago, IL
- “Musculoskeletal injury: A unified body theory”
 - “Sports-specific injury: Running and cycling”
 - “Use of MRI and optimization”
 - “Musculoskeletal injury: A unified body theory”
 - Categorical course (director)
 - Scientific session keynote lecture
- May 7-13, 2011 International Society for Magnetic Resonance in Medicine 19th Annual Scientific Meeting and Exhibition, Montreal, Canada
- “MRI of the ankle excluding tendons”
 - “MRI of the foot and ankle” (course)
- June 16-18, 2011 Sports Medicine 2011, Imaging and Managing Athletic Injuries, sponsored by Massachusetts General Hospital, Boston, MA
- “Meniscal tears in sports”
 - “Extensor apparatus, patella”
 - “Post-operative knee assessment”
 - “MR: Wrist injuries, instability”
 - “Post-operative elbow, wrist”
 - “MR: Ankle, mid-foot sprains”
 - “MR: Osteochondral lesions”

LEVON N. NAZARIAN, M.D.

- July 15-17, 2010 Diagnostic and Interventional Musculoskeletal Ultrasound: A Hands-on Approach, CME course co-sponsored by the American Institute of Ultrasound in Medicine and Mayo Clinic, Rochester, MN
- “General applications of musculoskeletal ultrasound”
 - “Common wrist and hand disorders”
 - “Common ankle and foot disorders”
 - “Ultrasound-guided ankle and foot procedures”

	<ul style="list-style-type: none"> • “Musculoskeletal ultrasound following total joint replacement” • “Ultrasound-guided elbow procedures”
September 24, 2010	<p>Visiting Lecturer, Department of Radiology, The New York-Presbyterian Hospital, Weill Cornell Medical College, New York, NY</p> <ul style="list-style-type: none"> • “Ultrasound-guided musculoskeletal interventions” (annual oration in honor of John A. Evans, MD)
October 8, 2010	<p>90th Anniversary Congress of Yerevan State Medical University, Yerevan, Armenia</p> <ul style="list-style-type: none"> • “Diagnostic musculoskeletal ultrasound” • “Interventional musculoskeletal ultrasound” • “New advances in ultrasound imaging”
October 22-24, 2010	<p>20th Annual Society of Radiologists in Ultrasound Meeting</p> <ul style="list-style-type: none"> • “Ultrasound-guided musculoskeletal interventions”
November 17, 2010	<p>Visiting Professor, Department of Radiology, Mount Sinai School of Medicine, New York, NY</p> <ul style="list-style-type: none"> • “General concepts of musculoskeletal ultrasound” (grand rounds) • Resident case conference
November 15, 2010	<p>South Jersey Healthcare Musculoskeletal Imaging Symposium, Vineland, NJ</p> <ul style="list-style-type: none"> • “Interventional musculoskeletal ultrasound”
January 31, 2011	<p>Visiting Professor, Department of Radiology, St. Luke’s-Roosevelt Hospital Center, New York, NY</p> <ul style="list-style-type: none"> • “Introduction to musculoskeletal ultrasound” (grand rounds) • Resident case conference
March 3, 2011	<p>38th Annual Course in Electrodiagnostic Medicine, sponsored by Jefferson Medical College, Philadelphia, PA</p> <ul style="list-style-type: none"> • “US of peripheral nerves”
March 3-5, 2011	<p>13th Annual Hand Surgery Symposium – Office Twitter: Strategies for Success in the Business of Hand and Upper Extremity Care, Philadelphia, PA</p> <ul style="list-style-type: none"> • “The role of ultrasound in the diagnosis and treatment of elbow conditions”
March 19-23, 2011	<p>6th Annual Fundamentals of Musculoskeletal Ultrasound Course, sponsored by the University of Michigan, Michigan, IL</p> <ul style="list-style-type: none"> • “Elbow anatomy and a scanning technique” • “Common elbow pathology” • “Elbow ligaments” • “Rheumatology: Upper extremity”

April 14-17, 2011 American Institute of Ultrasound in Medicine 2011 Annual Convention, New York, NY

- “Shoulder ultrasound”
- “Ultrasound of acute extremity trauma”
- “Ultrasound of superficial palpable lumps”
- “Cost and radiation savings of partial substitution of ultrasound for computed tomography in appendicitis evaluation: A national projection” (abstract)

May 10-13, 2011 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ

- “Musculoskeletal ultrasound course” (director)
- “Introduction to musculoskeletal ultrasound”
- “Ultrasound of the shoulder: Pathology”
- “Ultrasound of the elbow”
- “Knee ultrasound”
- “Ultrasound of the adult hip”
- “Ultrasound of soft tissue masses”
- “Ultrasound-guided musculoskeletal interventions”

LAURENCE NEEDLEMAN, M.D.

September 24-26, 2010 Registered Physician in Vascular Interpretation Exam Review Course, sponsored by the Society for Vascular Ultrasound and the University of Cincinnati, New Orleans, LA

- “Interpretation guidelines: Extracranial cerebrovascular”
- “Case interpretation examples: Carotid Duplex”
- “Interpretation guidelines: Graft surveillance”
- “Case interpretation examples: Arterial Duplex”
- “Interpretation guidelines: Venous Duplex, lower and upper extremity”
- “Case interpretation examples: Venous Duplex”
- “Panel discussion”

October 13-17, 2010 2010 Society of Diagnostic Medical Sonographers Annual Conference, Denver, CO

- “The swollen limb: Beyond DVT”
- “Interesting cases: ‘Where’s Waldo’ panel discussion”
- “Diagnostic criteria: How to apply them”

October 21-22, 2010 Microwave Ablation Workshop, Covidien, Inc., Boulder, CO

- “A multidisciplinary practice: Collaborating with surgeons and med-
oncs”
- “Where MW fits into a clinical practice”
- “Tumor board”
- “Skills lab”

November 19-20, 2010 Advances in Vascular Imaging and Diagnosis 21st Annual Symposium and Workshop on Management and Clinical Issues, sponsored by Cleveland Clinic, New York, NY

- “Waveform analysis: The hemodynamics behind the shapes”
- “Quality assurance: Some common sense approaches”

- “Logic, illogic, and evidence in carotid diagnostic criteria”
 - “Carotid diagnostic criteria beyond peak systolic velocities”
 - “Abdominal imaging” (moderator)
 - “Carotid case studies”
- January 15-20, 2011 International Symposium on Endovascular Therapy 2010, Hollywood, FL
- “Advanced carotid interpretation: Logic, illogic, problems and solutions”
 - “Live case scanning”
 - “Panel: Carotid artery disease”
 - “Lower extremity venous ultrasound: Does the evidence match your practice?”
 - “Renal artery disease: Duplex”
 - “Questions and answers type: Arterial disease”
- March 12-13, 2011 20th Annual Clinical Utilization of Color Doppler Ultrasound, Medical Technology Management Institute, Chicago, IL
- “Doppler waveforms and artifacts”
 - “Carotid arteries: Stenoses and stents”
 - “Doppler of the lower extremity veins”
 - “Doppler jeopardy”
 - “Doppler of the lower extremity arteries”
- March 30-
April 2, 2011 17th National Non-Invasive Diagnosis of Vascular Disease Symposium, sponsored by Mercy St. John’s Medical Center, St. Louis, MO
- Logic, illogic, and evidence in carotid diagnostic criteria”
 - “Pitfalls in interpretation of vascular exams” (moderator and speaker)
 - “Common sense approaches to quality assurance”
- April 14-17, 2011 American Institute of Ultrasound in Medicine 2011 Annual Convention, New York, NY
- “Current controversies in vascular sonography: Should the standard US exam include the calf veins”
- May 10-13, 2011 The Leading Edge in Diagnostic Ultrasound, sponsored by Thomas Jefferson University Hospital, Atlantic City, NJ
- “Carotid interpretation and pitfalls”
 - “From worksheet to report”
 - “Interesting cases”
 - “Vascular requisites”
- May 14-15, 2011 36th Annual Spring Diagnostic Ultrasound Course, presented by Los Angeles Radiological Society and Southern California Radiation Oncology Society, Los Angeles, CA
- “Plenary session: Arterial stenosis”
 - “Sonographic evaluation prior to dialysis access creation”
 - “Controversies and evidence in venous ultrasound”
 - “Carotid Duplex: Protocol, interpretation, pitfalls”

VIJAY RAO, M.D.

- October 9, 2010 95th Annual Meeting of the Pennsylvania Radiological Society, Pittsburgh, PA
- “Utilization management in radiology: Controversies and strategies”
 - “Turf battles in radiology – Strategies and tactics for winning: Part I and part II”
- November 28-
December 3, 2010 96th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL
- “Addressing threats to radiology: Commoditization, self-referral, turf, and utilization control” (refresher course)
 - “Sinonasal infections and inflammation” (refresher course)
 - “Trends in utilization rates of different imaging modalities in emergency departments: Nationwide Medicare data from 2000-2008”
 - “The recent rapid increase in abdominal imaging workload among radiologists”

DINESH SHARMA, M.D.

- January 28-31, 2010 64th National Conference of the Indian Radiological & Imaging Association, New Delhi, India
- “Step and shoot” cardiac gated CT for detection of pulmonary embolism: Technique and advantages”

LILLIAN STERN, M.D

- July 18-22, 2010 52nd Annual Meeting of the American Association of Physicists in Medicine, Philadelphia, PA
- “Breast specific gamma imaging/molecular breast imaging”
- October 1, 2010 Academy of radiology Physician Extenders Educational Symposium, Nashville, TN
- “Breast specific gamma imaging/molecular breast imaging”

MATHEW THAKUR, PH.D

- September 18-23, 2010 10th Congress of World Federation of Nuclear medicine and Biology, Cape Town, South Africa
- “Targeting genomic biomarkers in molecular imaging”
 - “Imaging gene expression”
 - “Radiolabeled stem cells”
 - “Optical imaging in vivo”
 - “Targeting epidermal growth factor receptors (EGFR) for PET imaging of breast cancer (BC)”

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| November 8-10, 2010 | Indo-US Workshop on Applications of ZMolecular Imaging in Health, Disease and Drug Discovery, Hyderabad, India <ul style="list-style-type: none"> • “Role of molecular imaging in drug discovery” |
| November 11-14, 2010 | 42 nd Annual Conference of Society of Nuclear Medicine-India, Chandigarh, India <ul style="list-style-type: none"> • “Genetic PET imaging in translational research” |
| March 31-
April 2, 2011 | 15 th Congress of the International Society of Radiolabeled Blood Elements, Nijmegen, The Netherlands <ul style="list-style-type: none"> • “Targeting apoptosis for optical imaging of infection” |
| April 19, 2011 | Loyd Harris Distinguished Lecture, Oklahoma University Health Science Center College of Pharmacy, Oklahoma City, OK <ul style="list-style-type: none"> • “Exploiting genomics biomarkers for oncologic imaging and therapy” |
| April 21-22, 2011 | Breast Cancer Imaging: State of the Art 2011, NIH/Society of Nuclear Medicine Workshop, Bethesda, MD <ul style="list-style-type: none"> • “Exploiting genomics biomarkers for oncologic imaging and therapy” |
| May 5-6, 2011 | Current and Future Role of Imaging in the Evolution of Infectious Diseases, NIH Workshop, Bethesda, MD <ul style="list-style-type: none"> • “A novel molecular probe for optical imaging of infection” |
| June 4-8, 2011 | Society of Nuclear medicine 58 th Annual Meeting, San Antonio, TX <ul style="list-style-type: none"> • “Profiling VPAC1 receptors for imaging breast cancer” • “Targeting apoptosis for optical imaging of infection.” |

LISA TARTAGLINO, M.D.

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| June 4-9, 2011 | American Society of Neuroradiology 49 th Annual Meeting, Seattle, WA <ul style="list-style-type: none"> • “Impact of the sentinel effect in a radiology benefit management program” • “Variability in procedure withdrawal rates among academic radiologists participating in a radiology utilization management (UM) program” |
|----------------|---|

ADAM ZOGA, M.D.

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| August 29-
September 1, 2010 | 19 th Annual Current Issues of Magnetic Resonance Imaging in Orthopaedics and Sports Medicine, San Francisco, CA <ul style="list-style-type: none"> • “MR of the hip: Extraarticular pathology including AVN, muscle, tendon and labrum” • “How I take a hip MRI” • “Imaging of sports hernias” • “Hip (panel discussion)” |
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October 7, 2010	Blue Ribbon Lecturer, Philadelphia Roentgen Ray Society, Philadelphia, PA <ul style="list-style-type: none"> • “The role of MRI in athletic pubalgia”
November 12-14, 2010	Shoulder and Elbow Update 2010 Workshop, Philadelphia, PA <ul style="list-style-type: none"> • “Imaging of core injuries at the pubic symphysis”
November 28- December 3, 2010	96 th Scientific Assembly and Annual Meeting of the Radiological Society of North America, Chicago, IL <ul style="list-style-type: none"> • “Imaging hip and groin” (refresher course) • “MRI of athletic pubalgia: Involvement and injury of the mature and immature pubic apophyses”
January 28-30, 2011	American College of Radiology Categorical Course, Musculoskeletal MR, Washington, DC <ul style="list-style-type: none"> • “MRI imaging of the hip” • “MRI ankle ligaments and tendons” • “MRI ankle marrow”
March 13-16, 2011	2011 Society of Skeletal Radiology Annual Meeting, Scottsdale, AZ <ul style="list-style-type: none"> • “Morphologic patterns of acetabular labrum tear on direct MR arthrography: Classification based on lesion location, extent, and therapeutic implication”
March 16, 2011	Visiting Lecturer, Department of Radiology, Hahnemann University Hospital, Philadelphia, PA <ul style="list-style-type: none"> • “Advanced imaging of arthritis”
March 20-23, 2011	Musculoskeletal Imaging on the Ski Slopes, Snowmass, CO <ul style="list-style-type: none"> • “MRI of athletic pubalgia” • “Imaging the throwing athlete” • “MRI of the hip in 2011” • “MRI of cartilage” • “Pre and post-operative cruciate ligament evaluation” • “Knee MR nuances and nuisances”
April 4-8, 2011	28 th Annual Magnetic Resonance Imaging 2011: National Symposium, Las Vegas, NV <ul style="list-style-type: none"> • “Knee MRI: Nuances and nuisances” • “MRI of shoulder impingement” • “Imaging of the AC and SC joints”
May 1-6, 2011	American Roentgen Ray Society 111 th Annual Meeting, Chicago, IL <ul style="list-style-type: none"> • “Imaging of the active lifestyle: From the weekend warrior to the pro athlete” (categorical course) • “MRI of athletic pubalgia”
May 10, 2011	Department of Radiology Grand Rounds, Maimonides Medical Center, New York, NY <ul style="list-style-type: none"> • “Imaging hip and groin pain in 2011”

APPENDIX III

HONORS, EDITORIAL ACTIVITIES, SERVICE TO REGIONAL OR NATIONAL ORGANIZATIONS

OKSANA BALTAROWICH, M.D.

- Professional and Academic Achievement Award, Ukrainian Medical Association of North America, 201
- President Elect, Pennsylvania Chapter, Ukrainian Medical Association of North America
- Member, Thyroid Advisory Oversight Group, U.S.-Belarus and U.S.-Ukraine Cooperative Studies of Post-Chernobyl Thyroid Disease, National Cancer Institute, National Institute of Health
- Member-at-Large, Board of Directors, Alliance of Medical Student Educators in Radiology
- Member, Publications Committee, Society of Radiologists in Ultrasound

DANIEL BROWN, M.D.

- Councilor, Post-Graduate Education Executive Council, Society of Interventional Radiology
- Chair, Workshop Program, Annual Meeting Committee, Society of Interventional Radiology
- Member, Executive Council, Society of Interventional Radiology
- Member, Annual Meeting Committee, Society of Interventional Radiology
- Member, Scientific Program Committee, Vascular and Interventional Subcommittee, Radiologic Society of North America
- Extramural Site Reviewer, National Cancer Institute Urologic Oncology Branch, National Institutes of Health
- Guest Editor, *Journal of Vascular and Interventional Radiology Supplement: Thermal Ablation 2010: At the Crossroads of Past Success, Current Goals and Future Technology*
- Member, Editorial Board, *Interventional Oncology Today*
- Member, Editorial Board, *Seminars in Interventional Radiology*
- Member, Editorial Board, *Updates in IR: An Evidence Based Approach*
- Abstract/Poster Reviewer, *The Symposium on Clinical Interventional Oncology*
- Named as one of the “Best Doctors in America”, *Philadelphia Magazine*
- Dean’s Award for Excellence in Faculty Mentoring, Jefferson Medical College, 2011

BARBARA CAVANAUGH, M.D.

- Clinical Image Reviewer, Stereotactic Breast Biopsy Accreditation Program, American College of Radiology
- Reviewer, *Journal of Ultrasound in Medicine*

SANDEEP DESHMUKH, M.D.

- Member, Board of Directors, Pennsylvania Radiological Society
- Reviewer, *Journal of Magnetic Resonance Imaging*

DAVID ESCHELMAN, M.D.

- Member, Clinical Scientific Working Group, Ocular Melanoma Foundation
- Examiner, Certificate of Added Qualifications in Vascular and Interventional Radiology Oral Examination, American Board of Radiology
- Reviewer, *Journal of Interventional Oncology*

RICK FELD, M.D.

- Chair, Education Committee, Society of Radiologists in Ultrasound Radiology
- Member, Executive Council, Society of Radiologists in Ultrasound Radiology
- Member, Board of Governors, American Institute of Ultrasound in Medicine
- Member, Executive Board, Philadelphia Roentgen Ray Society
- Member, Ultrasound Committee, Exam of the Future, American Board of Radiology
- Member, Education Program Committee, Philadelphia Roentgen Ray Society
- Member, Budget Committee, Philadelphia Roentgen Ray Society
- Subspecialty 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 Ultrasound in Medicine*
- Reviewer, *Journal of Ultrasound in Medicine and Biology*

STEVEN FINDEN, M.D.

- Second Place, Best Abstract, American Society of Head and neck Radiology 44th Annual Meeting, Houston, TX, October 2010, “Common dental findings: What the radiologist needs to know”

ADAM FLANDERS, M.D.

- 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
- Chair, Medical Imaging Resource Center, Radiological Society of North America
- Vice Chair, Radiology Informatics Committee, Radiological Society of North America
- Treasurer, American Society of Spine Radiology
- Member, Neuroradiology/ENT Subcommittee, RadLex, Radiological Society of North America
- Member, Informatics Committee, American College of Radiology
- Member, Educational Council, Radiological Society of North America
- Member, Publications Council, Radiological Society of North America
- Member, Radiology Informatics Subcommittee for Educational Exhibits, Radiological Society of North America
- Member, Program Committee, Society for Imaging Informatics in Medicine

- Member, Nominating Committee, American Society of Spine Radiology
- Member, Electronic Learning Center, American Society of Neuroradiology
- Member, Audiovisual Committee, American Society of Neuroradiology
- Grant Reviewer, Society Imaging Informatics in Medicine
- Grant Reviewer, Craig H. Nielsen Foundation for Spinal Cord Injury
- Associate Editor, Informatics (infoRAD), *Radiographics*
- Associate Editor, *Neurographics*
- Imaging Co-Editor, *Yearbook in Ophthalmology*
- Reviewer, Scientific Abstracts, Annual Meeting, Radiological Society of North America
- Reviewer, Scientific Abstracts, Annual Meeting, American Society of Neuroradiology
- Reviewer, Scientific Abstracts, 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, *Radiology*
- Outstanding Achievement Award, Cancer Biomedical Informatics Grid, National Cancer Institute, 2010
- Philip J. Hodes, M.D. Award for Excellence in Teaching, Department of Radiology, Thomas Jefferson University, 2011

FLEMMING FORSBERG, PH.D.

- Deputy Editor, Basic Science, *Journal 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, Radiological Society of North America Research & Education Foundation
- Grant Reviewer, The Swedish Research Council
- Reviewer, *Acoustic Research Letters Online*
- Reviewer, *Circulation*
- Reviewer, *IEEE Transactions on Ultrasonics, Ferroelectronics & Frequency Control*
- Reviewer, *IEEE Transactions on Medical Imaging*
- Reviewer, *International Journal of Cancer*
- Reviewer, *Journal of Ultrasound in Medicine*
- Reviewer, *Medical Engineering & Physics*
- Reviewer, *Medical Physics*
- Reviewer, *Radiology*
- Reviewer, *Ultrasonics*
- Reviewer, *Ultrasonic Imaging*
- Reviewer, *Ultrasound in Medicine and Biology*
- Reviewer, *Veterinary Radiology & Ultrasound*

DAVID FRIEDMAN, M.D.

- 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”, *Philadelphia Magazine*

ERIC GINGOLD, PH.D.

- President, Delaware Valley Chapter, American Association of Physicists in Medicine
- Vice Chair, Radiography and Fluoroscopy Subcommittee, American Association of Physicists in Medicine
- Co-Captain, Pennsylvania State Committee, Joint Medical Physics Licensure Subcommittee, American Association of Physicists in Medicine
- Member, Diagnostic Work and Workforce Study Subcommittee, 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
- Leader, Task Group 150, Detector Testing Subgroup, Acceptance Testing and Quality Control of Digital Radiograph Systems, American Association of Physicists in Medicine
- Member, DXIT Exam Committee, American College of Radiology
- Member, Certifying Exam Committee, American Board of Radiology
- Member, Limited Scope of Practice in Radiography Examination Committee, American Registry of Radiologic Technologists
- Image Quality Phantom Reviewer, MRI Accreditation Program, American College of Radiography
- Image Quality Phantom Reviewer, Mammography Accreditation Program, American College of Radiology
- Ad hoc Associate Editor, *Medical Physics*
- Reviewer, *Medical Physics*
- Reviewer, *Pediatric Radiology*
- Reviewer, *Radiology*
- Co-Director, Imaging Education Program, Annual Meeting, American Association of Physicists in Medicine

BARRY GOLDBERG, M.D.

- The First Albert Einstein Research Recognition Day Lecturer, Albert Einstein Medical Center
- 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, 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 Grant 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, Research and Education Fund Committee, 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*
- 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*
- Overseas Editorial Adviser, *Borno Medical Journal*
- Editorial Consultant, *Applied Radiology*
- Editorial Consultant, *Chest*
- Editorial Consultant, *Medcom Faculty of Medicine*
- Editorial Consultant, *Pediatrics*
- Member, Advisory Committee, *Ultrasonidos en Medicina*
- Member, Advisory Editorial Board, *Ultrasound in Medicine and Biology*
- Member, Editorial Advisory Board, *West African Journal of Ultrasound*
- Member, Editorial Board, *Advances in Echo Enhancement*
- Member, Editorial Board, *Archives of Clinical Imaging*
- Member, Editorial Board, *Clinics in Diagnostic Ultrasound*
- Member, Editorial Board, *Journal d'Echographie et de Medicine Ultrasonore*
- Member, Editorial Board, *Journal of Clinical Ultrasound in Medicine*

- Member, Editorial Board, *Journal of Surgical Ultrasonology*
- Member, Editorial Board, *Journal of Ultrasound in Medicine*
- Member, Editorial Board, *Journal of Ultrasound in Medicine and Biology*
- Member, Editorial Board, *Radiologia*
- Member, Editorial Board, *Ultrasound International*
- Member, Editorial Board, *Ultrasound International Journal*
- Member, Editorial Board Committee, *Acta Clinica Croatica*
- 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*
- Member, International Liaison Committee, *Ultrasound in Medicine and Biology*
- 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*
- Expert Panelist, AuntMinnie.com

CARIN GONSALVES, M.D.

- Dean's Award for Excellence in Education, Jefferson Medical College, 2011
- Outstanding Clinician Award, Jefferson Medical College, 2011
- Reviewer, *Journal of Vascular and Interventional Radiology*

RICHARD GORNIK, M.D.

- Reviewer, *Epilepsia*
- Reviewer, *Radiographics*

ETHAN HALPERN, M.D.

- Member, Task Force to Update Guidelines for Prostate Sonography, American College of Radiology
- Member, Public Information Advisors Network, Radiological Society of North America
- Associate Editor, *Academic Radiology*
- Associate Editor, *Radiology*
- Reviewer, *Academic Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Annals of Internal Medicine*
- Editors Certificate of Recognition, Review Special Distinction, *Radiology*

CHARLES INTENZO, M.D.

- Mentor-of-the-Year Award, American College of Nuclear Medicine, 2010-2011
- Member, Academic Council, Society of Nuclear Medicine
- Member, Oncology Council, Society of Nuclear Medicine
- Member, Therapy Council, Society of Nuclear Medicine
- Reviewer, *International Journal of Molecular Imaging*
- Reviewer, *Journal of the American Roentgen Ray Society*
- Reviewer, *Journal of Gastrointestinal Cancer*
- Reviewer, *Radiographics*
- Reviewer, *Radiology*

DAVID KARASICK, M.D.

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

STEPHEN KARASICK, M.D.

- Reviewer, *American Journal of Roentgenology*

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.

- Member, Research Committee, Society of Radiologists in Ultrasound
- Member, Editorial Advisory Board, *Diagnostic 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, *NeuroImage*
- Reviewer, *NMR in Biomedicine*
- Reviewer, *Pediatric Research*
- Reviewer, *Stroke*

DAVID LEVIN, M.D.

- Distinguished Alumnus Award, Johns Hopkins University School of Medicine
- 12th Annual Harold Schwinger Lecturer, Department of Radiology, University of Cincinnati
- 4th Annual Edward Smith Lecturer, Department of Radiology, University of Massachusetts Medical Center
- Co-Chair, Future Trends Committee, American College of Radiology
- Member, Commission on Economics, American College of Radiology
- Member, Committee on Radiologist Resources, American College of Radiology
- Member, Media Spokesperson Group, American College of Radiology
- Member, Committee on Evidence-Based Benefits Design, National Business Group on Health
- Member, Public Information Advisory Network, Radiological Society of North America
- Editorial Board, *Journal of the American College of Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Radiology*

JI-BIN LIU, M.D.

- 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, *Academic Radiology*
- Reviewer, *CardioVascular and Interventional Radiology*
- Reviewer, *Chinese Journal of Ultrasonography*
- Reviewer, *Journal of Clinical Ultrasound*
- Reviewer, *Journal of Ultrasound in Medicine*
- Reviewer, *Ultrasonics*
- Reviewer, *Ultrasound in Medicine and Biology*

SUZANNE LONG, M.D.

- Reviewer, *Journal of Ultrasound in Medicine*

CHRISTOPHER MERRITT, M.D.

- Lifetime Service Award, American Board of Radiology
- 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*
- Member, International Advisory Board, *Turkish Journal of Diagnostic and Interventional Radiology*
- Reviewer, *American Journal of Roentgenology*

DONALD MITCHELL, M.D.

- Chair, Abdominal Subcommittee, Structured Reporting Committee, Radiological Society of North America
- Chair, MRI Committee, RadLex, Radiological Society of North America
- Member, Steering Committee, Liver Imaging Reporting and Data System (LIRADS), American College of Radiology
- Member, Committee on Clinical Growth, International Society for Magnetic Resonance in Medicine
- Member, Expert Panel on Women's Imaging, American College of Radiology Appropriateness Criteria, American College of Radiology
- Member, Gynecology Disease Site Committee, American College of Radiology Imaging Network
- Member, Gynecologic Cancer Steering Committee, National Cancer Institute
- Member, Childhood Liver Disease Research and Education Network Data and Safety Monitoring Board, National Institute of Diabetes and Digestive and Kidney Diseases
- Director, MR Refresher Course Track, Annual Meeting, Radiological Society of North America
- 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, Program Committee, Society of Skeletal Radiology
- Chairman, Corporate Liaison ad hoc Committee, Society of Skeletal Radiology
- Chairman, Sponsorship Committee, International Skeletal Society
- Secretary, Executive Committee, Society of Skeletal Radiology
- Member, Expert Panel on Musculoskeletal Radiology, American College of Radiology Appropriateness Criteria, American College of Radiology
- Member, Task Force on Diagnosis and Management of the Charcot Foot, American Diabetes Association
- Member, Arthritis Advisory Committee, Food and Drug Administration

- Member, Expert Panel on Musculoskeletal Radiology, Continuous Professional Improvement Series, American College of Radiology
- Member, Technical Expert Panel: Federal Effective Healthcare Program “Use and Safety of Positional MRI in the Management of Patients with Musculoskeletal Pain”
- Member, Program Subcommittee, American Roentgen Ray Society
- Member, Program Committee, International Society of Magnetic Resonance in Medicine
- Member, Program Committee, International Skeletal Society
- Member, Musculoskeletal Maintenance of Certificate Cognitive Exam Committee, American Board of Radiology
- Associate Editor, Musculoskeletal Section, *Radiology*
- Member, Consulting Editorial Board, *Skeletal Radiology*
- Guest Editor, *MRI Clinics of North America: Normal Variations in Musculoskeletal MRI*
- Guest Editor, *Seminars in Musculoskeletal Radiology: Imaging the Post-operative Patient*
- Abstract Reviewer, Annual Meeting, American Roentgen Ray Society
- Abstract Reviewer, Annual Meeting, International Society of Magnetic Resonance in Medicine
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Journal of Magnetic Resonance Imaging*
- Reviewer, *Osteoarthritis and Cartilage*
- Reviewer, *Radiology*
- Reviewer, *Skeletal Radiology*

LEVON NAZARIAN, M.D.

- Gold Medal Award, Yerevan State Medical University, Republic of Armenia
- Distinguished Service Award, American Board of Radiology
- Vice Chair, Corporate Affairs Committee, Society of Radiologists in Ultrasound
- Chair, Written Clinical Examination, Ultrasound Imaging, American Board of Radiology
- Editor-in-Chief, *Journal Ultrasound in Medicine*
- Member, Advisory Editorial Board, *Ultrasound in Medicine and Biology*
- Member, Editorial Advisory Council, *The New American Medical Journal*
- Consultant to the Editor, *Radiology*
- Reviewer, *Clinical Orthopaedics and Related Research*
- Reviewer, *Academic Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Archives of Dermatology*
- Reviewer, *International Journal of Shoulder Surgery*
- Reviewer, *Journal of Rheumatology*
- Reviewer, *Journal of Orthopedic Research*
- Reviewer, *Ultrasound in Medicine and Biology*
- Reviewer, *Ultrasound Quarterly*
- Distinguished Reviewer, *American Journal of Roentgenology*
- Named as one of the “Best Doctors in America”, *Philadelphia Magazine*

LAURENCE NEEDLEMAN, M.D.

- President Elect, Board of Directors, Intersocietal Commission on Accreditation of Vascular Laboratories
- Member, Board of Directors, Pennsylvania Radiological Society
- Member, Committee on Ultrasonography, Pennsylvania Radiological Society
- Member, Guidelines and Standards Committee on Drug and Contrast, American College of Radiology
- Member, Ultrasound Guidelines and Standard Committee, American College of Radiology
- Chair, Collaborative Committee, Practice Guideline For The Performance Of An Ultrasound Examination Of The Extracranial Cerebrovascular System, American College of Radiology and American Institute of Ultrasound in Medicine
- Chair, Collaborative Committee, Practice Guideline For The Use of Intravascular Contrast Media American College of Radiology and Society for Pediatric Radiology
- Member, Endowment for Education and Research Committee, American Institute of Ultrasound in Medicine
- Member, Continuous Professional Improvement Panel, Ultrasound, American College of Radiology
- Member, Public Information Advisors Network, Radiological Society of North America
- External Reviewer, Appropriate Use Criteria for Peripheral Vascular Ultrasound and Physiological Testing, American College of Cardiology
- Grant Reviewer, Medicine Endowment for Education and Research, American Institute of Ultrasound
- Member, Editorial Board, *Journal of Ultrasound in Medicine*
- Subspecialty Editor, *Journal of Ultrasound in Medicine*
- Subspecialty Editor, *Vascular Ultrasound*
- Reviewer, *Journal of Ultrasound in Medicine*
- Reviewer, *Radiology*

LAURENCE PARKER, PH.D.

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

VIJAY RAO, M.D.

- President, American Association for Women Radiologists
- Member, Board of Trustees, Research and Education Foundation, Radiological Society of North America
- Member, Finance Committee, American Association for Women Radiologists
- Member, Bylaws Committee, American Association for Women Radiologists
- Member, Research and Education Board of Trustee Liaison to Radiological Society of North America Education Committee, Radiological Society of North America
- Member, Individual Giving Subcommittee, Research and Education Foundation, Radiological Society of North America
- Member, Research and Education Evaluation Committee, 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 and Leadership Development Committee, American College of Radiology
- Member, Government and Regulatory Issues in Academic Radiology, American College of Radiology
- Member, Utilization Management Committee, 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*
- Reviewer, Scientific Exhibits, Radiographics Annual Meeting, Radiological Society of North America
- Reviewer, *Academic Radiology*
- Reviewer, *American Journal of Neuroradiology*
- Reviewer, *Health Affairs*
- Reviewer, *Radiographics*
- Reviewer, *Radiology*
- Named as one of the “Best Doctors in America”, *Philadelphia Magazine*
- Distinguished Radiologist Award, American Association of Radiologists of Indian Origin
- Professional Excellence Award, Council of Indian Organizations in Greater Philadelphia

CHRISTOPHER ROTH, M.D.

- Reviewer, *Journal of Magnetic Resonance Imaging*
- Editors Certificate of Recognition, Distinguished Reviewer, *Journal of Magnetic Resonance Imaging*

LISA TARTAGLINO, M.D.

- Reviewer, *Radiographics*
- Reviewer, *Radiology*

MATHEW THAKUR, PH.D.

- Member, Board of Governors, Greater New York Chapter, Society of Nuclear Medicine
- Co-chair, 2020 Task Force, Society of Nuclear Medicine,
- Member, Advisory Committee, US Pharmacopeia
- Member, Advisory Committee, Kuwait Medical Research Council
- Member, Advisory Committee, International Atomic Energy Agency
- Chair, Young Investigators Award Committee, International Society of Radiolabeled Blood Elements
- Member, Publication Committee, Society of Nuclear Medicine
- Member, Financial Committee, Society of Nuclear Medicine
- Member, Public Relations Committee, Society of Nuclear Medicine
- Member, Grant Review Service, Foundation for Medical Research, Vienna, Austria
- Member, Board of Directors, Eagle Alliance
- Member, Award Committee, Society of Nuclear Medicine
- Grant Reviewer, NExT Study Section, National Institutes of Health
- Grant Reviewer, MEDI Study Section, National Institutes of Health
- Ad hoc member, Grant Review Service, National Institutes of Health
- Member, Editorial Board, *Current Molecular Imaging*

- Member, Editorial Board, *European Journal of Nuclear Medicine and Molecular Imaging*
- 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 Molecular Imaging and Radionuclide Therapy*
- Reviewer, *Bioconjugate Chemistry*
- Reviewer, *Bioorganic and Medicinal Chemistry*
- Reviewer, *Breast Cancer Research*
- Reviewer, *Circulation*
- 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, *Molecular Pharmaceutics*
- Reviewer, *Netherlands Government Grant*
- Reviewer, *Nuclear Medicine Communications*
- Reviewer, *Oncology*
- Reviewer, *Separation Science*
- Reviewer, *Veterinarian Journal of Pharmaceuticals and Therapy*
- Appreciation Award, Jefferson Kimmel Cancer Center, Thomas Jefferson University

TERRI TUCKMAN, M.D.

- 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, Reach to Recovery Program Committee, American Cancer Society
- Member, Medical Advisory Board, Linda Creed Breast Cancer Foundation

ADAM ZOGA, M.D.

- Member, Expert Panel, Musculoskeletal Radiology Appropriateness Criteria, Bone Tumors, American College of Radiology
- Member, Scientific Program Committee, Annual Meeting, American Roentgen Ray Society
- Poster Reviewer, Radiographics Annual Meeting, Radiological Society of North America
- Member, Editorial Board, Seminars in Musculoskeletal Radiology
- Guest Editor, *MRI Clinics of North America: Normal Variants and Pitfalls in Musculoskeletal MRI*

- Reviewer, *American Journal of Radiographics*
- Reviewer, *American Journal of Radiology*
- Reviewer, *American Journal of Roentgenology*
- Reviewer, *Clinical Orthopaedics and Related Research*
- Reviewer, *Radiology Case Reports*
- Named as one of the “Top Docs”, *US News and World Report*

APPENDIX IV - ACTIVE GRANTS

07/01/10 - 06/30/11

(Report reflects entire project period awarded and TJU fiscal year expensed)

NIH/OTHER FEDERAL GRANTS

PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	FUNDING SOURCE	FUNDING DATES	DIRECT COSTS	INDIRECT COSTS	TOTAL COSTS FUNDED
Flanders, A. X13001	Value of MRI and DTI as Biomarkers for Classifying Acute Spinal Cord Injury	U.S. Army Medical Research Acq. W81XWH-10-1-0935	09/30/10 - 10/31/13	\$157,125 ----- \$56,133 (current fiscal yr)	\$86,064 ----- \$30,705 (current fiscal yr)	\$243,189 ----- \$86,838 (current fiscal yr)
Flanders, A. Z55301 (subcontract)	In Silico Research Center for Excellence	NIH (SAIC-Frederick) thru Emory University Contract #29XS193	08/24/09 - 08/23/13	\$55,219 ----- \$22,400 (current fiscal yr)	\$30,095 ----- \$12,208 (current fiscal yr)	\$85,314 ----- \$34,608 (current fiscal yr)
Flanders, A. Z58301	caBIG - In Vivo Imaging Workspace	NIH (NCI) thru Booz Allen Hamilton Inc	06/15/10 - 04/14/11	\$10,317 ----- \$10,317 (current fiscal yr)	\$2,683 ----- \$2,683 (current fiscal yr)	\$13,000 ----- \$13,000 (current fiscal yr)
Forsberg, F. R97601	Noninvasive and Accurate Measurement of Portal Hypertension	NIH (NIDDKD) RC1 DK087365	09/30/09 - 12/31/11	\$684,766 ----- \$380,315 (current fiscal yr)	\$210,176 ----- \$104,257 (current fiscal yr)	\$894,942 ----- \$484,572 (current fiscal yr)
Forsberg, F. R99001	Quantitative Subharmonic Breast Imaging	NIH (NCI) R01 CA140338	05/01/10 - 02/28/14	\$1,651,250 ----- \$159,252 (current fiscal yr)	\$419,678 ----- \$47,415 (current fiscal yr)	\$2,070,928 ----- \$206,667 (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 - 08/31/12	\$297,357 ----- \$90,723 (current fiscal yr)	\$162,060 ----- \$49,444 (current fiscal yr)	\$459,417 ----- \$140,167 (current fiscal yr)
Forsberg, F. Z54401 (subcontract)	IVUS Detection of Rupture Prone Plaques	NIH (NHLBI) thru University of Rochester R01 HL088523	07/15/09 - 06/30/11	\$90,428 ----- \$78,134 (current fiscal yr)	\$46,644 ----- \$39,944 (current fiscal yr)	\$137,072 ----- \$118,078 (current fiscal yr)

Forsberg, F. Z55901 (subcontract)	Sonothrombolysis of Vascular Clots with Targeted Bubbles	NIH (NHLBI) thru NuvOx Pharma R44 HL071433	12/07/09 - 12/31/10	\$14,385 ----- \$13,435 (current fiscal yr)	\$7,840 ----- \$7,322 (current fiscal yr)	\$22,225 ----- \$20,757 (current fiscal yr)
Goldberg, B. R93801	Contrast-Enhanced Ultrasound Detection of Secondary Lymph Nodes	NIH (NCI) R21 CA137733	12/01/08 - 11/30/11	\$220,000 ----- \$57,905 (current fiscal yr)	\$119,900 ----- \$31,558 (current fiscal yr)	\$339,900 ----- \$89,464 (current fiscal yr)
Halpern, E. R83101	US Prostate Cancer Detection with Dutasteride Pretreatment	NIH (NCI) R01 CA118003	07/14/06 - 06/30/11	\$710,324 ----- \$69,275 (current fiscal yr)	\$390,678 ----- \$41,743 (current fiscal yr)	\$1,101,002 ----- \$111,018 (current fiscal yr)
Intenzo, C. Z56501	ACRIN 6685: FDG-PET of Head and Neck Cancer	NIH thru ACRIN (cooperative group)	01/01/10 - 12/31/10	\$21,667 ----- \$12,467 (current fiscal yr)	\$4,333 ----- \$2,493 (current fiscal yr)	\$26,000 ----- \$14,960 (current fiscal yr)
Intenzo, C. Z56701	ACRIN 6688: Phase II Study of 3'-deoxy-3'18F Fluorothymidine (FLT) in Invasive Breast Cancer	NIH thru ACRIN (cooperative group)	04/01/10 - 03/31/13	\$98,967 ----- \$24,361 (current fiscal yr)	\$19,793 ----- \$4,872 (current fiscal yr)	\$118,760 ----- \$29,233 (current fiscal yr)
O'Kane, P. Y00501	IPA for Chornobyl Research Unit	NIH (NCI)	04/01/06 - 02/10/11	\$8,809 ----- \$3,446 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$8,809 ----- \$3,446 (current fiscal yr)
Sarro, V. M06701	Health Care Facilities and Other Construction	Health Resources and Services Administration C76 HF19914-01-00	09/01/10 - 12/31/11	\$792,000 ----- \$792,000 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$792,000 ----- \$792,000 (current fiscal yr)
Thakur, M. AG0205	Health Research Formula Fund	PA Department of Health	01/01/10 - 12/31/13	\$83,000 ----- \$57,959 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$83,000 ----- \$57,959 (current fiscal yr)
Thakur, M. R76901	PET Imaging of Breast Cancer Using Oncogene Expression	NIH (NCI) R01 CA109231	04/01/05 - 02/28/12	\$1,019,422 ----- \$58,254 (current fiscal yr)	\$550,604 ----- \$32,040 (current fiscal yr)	\$1,570,026 ----- \$90,294 (current fiscal yr)

Thakur, M. R89101	PET for Molecular Imaging of Small Animals	NIH S10 RR023709	04/01/08 - 03/31/10	\$500,000 ----- \$0 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$500,000 ----- \$0 (current fiscal yr)
Thakur, M. R98401	Optical Imaging for Translational Cancer Research	NIH S10 RR026678	03/04/10 - 03/03/11	\$174,955 ----- \$0 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$174,955 ----- \$0 (current fiscal yr)
Wolf, M. Z56901	ACRIN 6686/RTOG 0825 Trial: Advanced Imaging	NIH thru ACRIN (cooperative group)	06/29/10 - 12/31/11	\$51,750 ----- \$7,137 (current fiscal yr)	\$10,350 ----- \$0 (current fiscal yr)	\$62,100 ----- \$1,115 (current fiscal yr)
				TOTAL NIH/FEDERAL FUNDING ----- \$1,893,514 (current fiscal yr)	\$2,060,898 ----- \$406,684 (current fiscal yr)	\$8,702,639 ----- \$2,300,198 (current fiscal yr)

Active Grants**07/01/10 - 06/30/11****(Report reflects entire project period awarded and TJU fiscal year expensed)****FOUNDATION/NON-PROFIT ORGANIZATION GRANTS**

PRINCIPAL INVESTIGATOR	TITLE OF PROJECT	FUNDING SOURCE	FUNDING DATES	DIRECT COSTS	INDIRECT COSTS	TOTAL COSTS FUNDED
Lai, S. J63201	Neuroimaging Brain Changes in Glaucoma	Wills Eye Institute	10/21/10 - 09/30/11	\$43,971 ----- \$24,505 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$43,971 ----- \$24,505 (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 - 09/30/10	\$50,000 ----- \$536 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$50,000 ----- \$536 (current fiscal yr)
Rao, V. F65401	Center for Research on Utilization of Imaging Services	American College of Radiology	01/01/04 - 5/16/12	\$526,840 ----- \$73,322 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$526,840 ----- \$73,322 (current fiscal yr)
TOTAL NON-PROFIT FUNDING				\$620,811 -----	\$0 -----	\$620,811 -----
CURRENT TJU FY NON-PROFIT FUNDING				\$98,363 (current fiscal yr)	\$0 (current fiscal yr)	\$98,363 (current fiscal yr)

Active Grants**07/01/10 - 06/30/11****(Report reflects entire project period awarded and TJU fiscal year expensed)****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 ----- \$11,535 (current fiscal yr)	\$20,986 ----- \$2,534 (current fiscal yr)	\$107,931 ----- \$14,068 (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. J56701	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 Diagnostics	12/17/09 - 12/31/11	\$85,500 ----- \$51,746 (current fiscal yr)	\$20,000 ----- \$25,100 (current fiscal yr)	\$105,500 ----- \$76,846 (current fiscal yr)
Goldberg, B. J66701	Evaluation of the Aixplorer Ultrasound System for Abdominal, Gynecological, Musculoskeletal, and Breast Applications	SuperSonic Imagine, Inc.	04/14/11 - 04/13/12	\$4,000 ----- \$0 (current fiscal yr)	\$1,000 ----- \$0 (current fiscal yr)	\$5,000 ----- \$0 (current fiscal yr)
Halpern, E. J56801	Cost-Benefit Analysis of Triple Rule-Out Studies Using iCT for ER Chest Pain Patients	Philips Healthcare	08/01/09 - 07/31/10	\$10,000 ----- \$777 (current fiscal yr)	\$0 ----- \$0 (current fiscal yr)	\$10,000 ----- \$777 (current fiscal yr)
Lai, S. J63201	Neuroimaging Brain Changes in Glaucoma	Wills Eye Institute	12/21/07 - 08/30/09	\$43,521 ----- \$0 (current fiscal yr)	\$10,255 ----- \$6,090 (current fiscal yr)	\$53,776 ----- \$6,090 (current fiscal yr)

McCann, J. J63601	Clinical Registry of St. Jude Medical Angio-Seal™ Vascular Closure Devices following Interventional Radiology Procedures	St. Jude Medical, Inc.	10/22/10 - 10/21/13	\$34,100 ----- \$5,352 (current fiscal yr)	\$7,900 ----- \$2,161 (current fiscal yr)	\$42,000 ----- \$7,513 (current fiscal yr)
Mitchell, D. J47001	Fatty Liver and Metabolic Syndrome	Philips Medical Systems North America	09/01/08 - 11/30/11	\$20,500 ----- \$5,543 (current fiscal yr)	\$4,500 ----- \$0 (current fiscal yr)	\$25,000 ----- \$5,543 (current fiscal yr)
Mitchell, D. J47101	Evaluation of Hepatocellular Carcinoma Response	Philips Medical Systems North America	01/08/09 - 01/31/12	\$10,000 ----- \$5,543 (current fiscal yr)	\$2,500 ----- \$0 (current fiscal yr)	\$12,500 ----- \$5,543 (current fiscal yr)
Thakur, M. J43901	Supplement to NIH Grant	NuView Radio- Pharmaceuticals	07/24/08 - 02/28/12	\$49,700 ----- \$31,034 (current fiscal yr)	\$12,425 ----- \$0 (current fiscal yr)	\$62,125 ----- \$31,034 (current fiscal yr)
TOTAL INDUSTRIAL FUNDING				\$369,266 ----- \$111,530 (current fiscal yr)	\$85,816 ----- \$35,885 (current fiscal yr)	\$455,082 ----- \$147,415 (current fiscal yr)
TOTAL FUNDING				\$7,631,818 -----	\$2,146,714 -----	\$9,778,532 -----
TOTAL CURRENT YEAR FUNDING				\$2,103,408 (current fiscal yr)	\$442,569 (current fiscal yr)	\$2,545,976 (current fiscal yr)

APPENDIX V - PENDING GRANTS

07/01/10 - 06/30/11

(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
Flanders, A. (subcontract)	Extensible Informatics Platform for Quantitative MRI of Cancer Therapy Response	NIH thru Northwestern University	04/01/12 - 03/31/17	\$174,610 ----- \$33,005 (-01 year)	\$96,039 ----- \$18,153 (-01 year)	\$270,649 ----- \$51,158 (-01 year)
Forsberg, F. (Eisenbrey, J.) Post-Doctoral Award FUNDED	Analysis of 3D Subharmonic US Signals from Patients with Known Breast Cancxer	USAMRAA W81XWH-11-1-0630	10/31/11 - 09/29/14	\$183,793 ----- \$64,835 (-01 year)	\$14,704 ----- \$5,187 (-01 year)	\$198,497 ----- \$70,022 (-01 year)
Forsberg, F.	Vivo 2100 Ultrasound Scanner	NIH	04/01/12 - 03/31/13	\$524,615 ----- \$524,615 (-01 year)	\$0 ----- \$0 (-01 year)	\$524,615 ----- \$524,615 (-01 year)
Forsberg, F.	Pressure Measurements in Heart-Failure Patients Using Subharmonic Bubble Signals	NIH	07/01/12 - 06/30/14	\$275,000 ----- \$150,000 (-01 year)	\$151,250 ----- \$82,500 (-01 year)	\$426,250 ----- \$232,500 (-01 year)
Forsberg, F.	Subharmonic Imaging and Pressure Estimatoin for Monitoring Neoadjuvant Therapy	USAMRAA	09/30/12 - 09/29/14	\$374,581 ----- \$217,020 (-01 year)	\$186,770 ----- \$100,111 (-01 year)	\$561,351 ----- \$317,131 (-01 year)
Goldberg, B. (subaward)	Histotripsy Guided by CEUS for Treatment of Metastatic Lymph Nodes	NIH thru University of Michigan	07/01/12 - 06/30/15	\$604,136 ----- \$219,885 (-01 year)	\$279,694 ----- \$68,357 (-01 year)	\$883,830 ----- \$288,242 (-01 year)
Halpern, E.	Promoting Active Surveillance for Favorable Risk Prostate Cancer with Contrast-Enhanced Ultrasound	USAMRAA	09/30/12 - 09/29/15	\$311,463 ----- \$101,794 (-01 year)	\$171,305 ----- \$55,987 (-01 year)	\$482,768 ----- \$157,781 (-01 year)

Liu, J.	Early Detection of Renal Allograft Dysfunction using Hemodynamic Monitoring	NIH	07/01/12 - 06/30/14	\$312,624 ----- \$176,005 (-01 year)	\$115,731 ----- \$62,196 (-01 year)	\$428,355 ----- \$238,201 (-01 year)
Thakur, M.	SPECT/CT for Small Animal Imaging Facility at TJU	NIH	07/01/12 - 06/30/13	\$851,282 ----- \$851,282 (-01 year)	\$0 ----- \$0 (-01 year)	\$851,282 ----- \$851,282 (-01 year)
Thakur, M.	VPAC1 Receptor-Targeted PET Imaging for Prostate Cancer	NIH	12/01/11 - 11/30/16	\$2,425,842 ----- \$499,734 (-01 year)	\$898,610 ----- \$193,363 (-01 year)	\$3,324,452 ----- \$693,097 (-01 year)
TOTAL NIH GRANT FUNDING				\$6,037,946 -----	\$1,914,103 -----	\$7,952,049 -----
TOTAL FIRST YEAR NIH FUNDING				\$2,838,175 (-01 year)	\$585,854 (-01 year)	\$3,424,029 (-01 year)

APPENDIX V - PENDING GRANTS

07/01/10 - 06/30/11

(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
Brown, D.	A Phase III Clinical Trial of Intra-Arterial TheraSphere® in the Treatment of Patients with Unresectable Hepatocellular Carcinoma (HCC)	Nordion, Inc	01/01/12 - 12/31/16	\$21,360 ----- \$7,120 (-01 year)	\$5,340 ----- \$1,780 (-01 year)	\$26,700 ----- \$8,900 (-01 year)
Cavanaugh, B.	A Pivotal Study of Imaging with Opto-acoustics to Diagnose Breast Masses Detected by Mammography and/or Diagnostic Gray-Scale Ultrasound: A New Evaluation Tool for Radiologists	Seno Medical Instrumenst	01/01/12 - 12/31/12	\$60,000 ----- \$60,000 (-01 year)	\$15,000 ----- \$15,000 (-01 year)	\$75,000 ----- \$75,000 (-01 year)
Forsberg, F.	Improved Visualization and Identification of Breast Microcalcifications Identified with MicroPure Compared to Grayscale Ultrasound Using Mammography as the Reference Standard	St. Jude Medical	08/01/10- 07/31/11	\$35,450 ----- \$35,450 (-01 year)	\$8,000 ----- \$8,000 (-01 year)	\$43,450 ----- \$43,450 (-01 year)
Halpern, E. ACTIVE	The Evaluation of the Aixplorer Ultrasound System for Evaluation of the Prostate	SuperSonic Imagine, Inc.	09/15/11 - 09/14/12	\$10,500 ----- \$10,500 (-01 year)	\$0 ----- \$0 (-01 year)	\$10,500 ----- \$10,500 (-01 year)
Liu, J.	Feasibility Study of Definity Enhanced Ultrasound Imaging for Detection of Sentinel Lymph Nodes	Lantheus Medical Imaging	09/01/11 - 06/30/12	\$22,600 ----- \$22,600 (-01 year)	\$8,113 ----- \$8,113 (-01 year)	\$30,713 ----- \$30,713 (-01 year)

Thakur, M.	VPAC-1 Breast Biomarkers	NuView Life Sciences, Inc.	11/01/11 - 10/31/13	\$187,703	\$91,036	\$278,739
				----- \$101,600 (-01 year)	----- \$49,276 (-01 year)	----- \$150,876 (-01 year)
			TOTAL INDUSTRIAL FUNDING	\$337,613	\$127,489	\$465,102
			TOTAL FIRST YEAR INDUSTRIAL FUNDING	----- \$237,270 (-01 year)	----- \$82,169 (-01 year)	----- \$319,439 (-01 year)
			TOTAL PENDING FUNDING	\$6,375,559	\$2,041,592	\$8,417,151
			TOTAL FIRST YEAR PENDING FUNDING	----- \$3,075,445 (-01 year)	----- \$668,023 (-01 year)	----- \$3,743,468 (-01 year)