MRVector Newsletter

American Registry of Magnetic Resonance Imaging Technologists
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www.armrit.org

Summer/Fall Issue 2010
Vol. XVI No. 2

Raymond V. Damadian, MRI Imaging Machine Inventor - Keynote Speaker ARMRIT 5th Annual Meeting in Las Vegas

New York, NY.

The American Registry of MRI Technologists is proud to announced that Raymond V. Damadian the inventor of the MRI scanner and the first to perform a total body MRI scan of the human body in 1977 has accepted the ARMRIT invitation to be its keynote speaker at its 5th Annual meeting and seminar. The meeting will be held on October 21-23, 2010 at the elegant Stirling Club in the Turnberry Towers complex on Paradise Road, in Las Vegas, Nevada.

Dr. Damadian is a native New Yorker, graduated from Albert Einstein School of Medicine in Bronx, New York, did his MRI research at Downstate Medical Center, in Brooklyn, New York, established and located his company at Melville, New York where he lives.

The title of his lecture is "The History and Genesis of MRI, A Machine Called Indomitable". The Registry has already received numerous inquiries from its certified techs that if he is in fact coming to the meeting and will be a speaker. His lecture is very much anticipated and everyone looks forward to learn how this indomitable machine came to be invented and eventually fully accepted as a revolutionary imaging diagnostic tool. Don't miss this historic event.

Wilfrido M. Sy, MD

Dr. Raymond Damadian The "Henry Ford" of MRI

(reprint from previous issues)

Long Island, New York

When Raymond Damadian was a boy, he lost his Grandmother to a slow death by cancer. This loss affected him greatly. Young Damadian vowed to find a way to detect this dreaded disease in its early stages, and still treatable, so that others could be saved. Thus, a lifetime goal was set at an early age.

Of Armenian descent, Damadian grew up in Forest Hills, New York. In his childhood years Damadian attended the Julliard School and became very proficient playing the violin. He also played tennis and won many junior championships.

Damadian was introduced to NMR by Edward Purcell at Harvard University when Purcell drew an NMR spectrum on a blackboard as part of a course he was teaching. This subject sparked Damadian's interest immediately.

After a tour of duty in military service and medical school at Albert Einstein College of Medicine in New York, Damadian joined the faculty of Downstate Medical Center in Brooklyn, New York. About this time Dr. Damadian began to experience persistent abdominal pain.

(Cont. on page 2)

Oregon to License MRI Includes ARMRIT Certification

Portland, Oregon

Oregon Board of Medical Imaging (formerly OBRT) has included ARMRIT certification as a requirement to be eligible for a Medical Imaging Technologist License to practice MRI Technology. To view the first Oregon licenses awarded to ARMRIT certified MRI Techs see page 5.

(Cont. on page 3)

West Virginia Medical Imaging and Radiation Therapy Technology Board of Examiners

Wheeling, WV

Prior to Oregon, West Virginia has included ARMRIT certification as a requirement for a license to practice MRI Technology.

Centers for Medicare and Medicaid Services (CMS)

has established accreditation requirements for providers of advanced medical imaging mandated by the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA). Providers must comply with CMS' requirement that all providers of CT, MRI, PET & Nuclear Medicine, be accredited by Jan. 1, 2012, in order to be reimbursed.

Inside this issue:

ARMRIT 2010:
5th Annual Meeting & Seminar
Oct. 21-23

Stirling Club
@Turnberry Place
Las Vegas, Nevada

For Accommodations:
@ the World Famous
Las Vegas Hilton
thru September 21, 2010:

Call Directly: **800-635-7711** between 6:00am to 12am Daily. Ask for Rooms for the **ARMRIT group**.

Fill Out Registration Form ***On Page 9*** *and Fax to: 718-347-8691*
Or visit www.armrit.org and Click on the Acteva Box!

Damadian (cont. from page 1)

He had rarely been sick. The possibility of cancer entered his mind. Although the pain subsided eventually, this was the spark which ignited the interest in developing a method to view the human body's interior for early detection of disease.

Using a primitive NMR machine, Dr. Damadian found that he could distinguish between normal tissue and cancerous tissue in rats implanted with tumors. During testing, he found that T1 and T2 relaxation times for healthy and unhealthy tissue were noticeably different. Discovering that the NMR machine was useful in detecting cancer, Damadian envisioned its use in the detection of heart and kidney, as well as mental disease.

After publishing his article in "Science" magazine in 1971, many individuals in the scientific and NMR community considered Damadian's ideas to be far out in left field. They saw NMR as a test for high resolution sampling only. Test tube samples are spun at about one hundred rotations per minute in order to create a stronger and clearer signal from a more homogeneous sample. To put a person in the NMR machine seemed totally outlandish. When Dr. Damadian, during his various lecture tours, mentioned his desire to build an NMR machine that was large enough to scan a human, it seemed as if someone from the audience always asked, "How fast are you going to spin the patient?" Needless to say, he had few supporters at this time.

Writing to President Nixon, after many attempts to obtain grant money for research, Damadian received a grant from the National Institute of Health (NIH) in 1971, to continue his work. He proposed to use whole body scanning by NMR for medical diagnosis in a patent application in 1972.

During experimentation, Dr. Damadian found that cancerous tissue had a relaxation time two to three times that of normal tissue. Being an outsider to the well-entrenched NMR community, Damadian felt that people, like Dr. Paul Lauterbur were trying to subvert his efforts to obtain funding for research. Damadian found an ally in his Brother-in-law who spent long hours trying to raise money for Dr. Damadian to continue when he was almost depleted of funds.

In February, 1974, Dr. Damadian was issued a patent for his "Apparatus and Method for Detecting Cancer in Tissue".

By February 1976, Dr. Damadian, using his FONAR method - field focusing nuclear magnetic resonance - was able to scan the interior of a live mouse with the NMR signal. Many such experiments were performed using mice. The first one was called "Pioneer Mouse". Coils were placed around the mouse. In an attempt to get a clearer focus, the current was increased continuously. Unfortunately this cooked "pioneer mouse". On March 11th, 1976, Dr. Larry Minkoff, an assistant to Dr. Damadian, was able to produce a crude image of a tumor on the anterior chest wall of the second pioneer mouse.

Everywhere Dr. Damadian spoke about NMR and its possible application to detect cancer in humans; it seemed everyone was talking about Paul Lauterbur's technique called Zeugmatography. Damadian was fearful that Lauterbur would get credit for his ideas and receive recognition that was rightfully his.

Also in February 1976, Damadian's team, consisting of Larry Minkoff and Mike Goldsmith were ready to construct a machine large enough to scan a human. Finding that their funds were insufficient to buy a magnet, they decided to build their own.

- ***In February, 1974, Dr. Damadian was issued a patent for his "Apparatus and Method for Detecting Cancer in Tissue".***

At the same time, two groups in the physics department of the University of Nottingham in England were working to produce clear NMR images. One group, led by Waldo Hinshaw and Raymond Andrew, the other group, led by Peter Mansfield. Hinshaw evolved his own scanning technique, thinking that Lauterbur's was too complicated. Instead he used oscillating gradients to isolate a point or plane in space. This way Hinshaw was able to focus the scan on one area, wiping out all other signals in the sample. Images of a lemon and a human wrist were eventually produced employing this method.

- ***By February 1976, Dr. Damadian, using his FONAR method - field focusing nuclear magnetic resonance - was able to scan the interior of a live mouse with the NMR signal.***

In 1974, Mansfield discovered a method to image a "selective slice" of tissue. He had scanned chicken legs (dead) and later produced scans of a human finger with amazing detail. Another group, EMI, in Aberdeen, Scotland also had ongoing research in NMR imaging.

The design of a human NMR scanner slowly began to take form. The heart of the machine was a very large magnet. With the help of the Physics Department of Brookhaven National Laboratory, Dr. Damadian received information on the construction of a superconducting magnet. The design was called the "Helmhotz Pair". It consisted of two hoops of Niobium-titanium wire wrapped around many times to produce a solenoid. When attached to a power source, the magnet would have a field strength of five thousand gauss (0.5T). All other magnets of this size were part of nuclear accelerators.

One concern was the effect of having two extremely powerful magnets in the same room. There was the possibility that the supporting structure would not be sufficient to keep the magnets apart and could slam together with tremendous force. A scary prospect indeed.

By a stroke of good luck, the team was able to obtain superconducting wire for pennies on the dollar from Westinghouse when the company decided to get out of the superconducting wire business. At the same time, it was learned that Paul Lauterbur had ordered a resistive magnet with a bore large enough to place a human inside. Upon delivery it was discovered that the opening was too small!

Mike Goldsmith spent many weeks wrapping the superconducting wire into hoop shaped coils for the new machine. He was worried that the joints holding the wire together might be faulty. Goldsmith used an ohmmeter to check the coils, luckily all connections were good. Damadian and Minkoff built the cryostats to contain the liquid helium and nitrogen.

Each container was about 10 feet tall and weighed over a ton. Many long hours were spent in the lab, fearing that Lauterbur would be the first to scan a human. At times they would work through the night and home was only a place to sleep.

The doughnut-shaped dewar (cryostat) took nearly a year to construct. Leaks were a major problem, even a hole the size of a molecule had to be sealed; cryogen could leak right through the pores of the aluminum. The entire structure had to be covered by the welding torch. Minkoff learned to weld through a three-part series featured in a science magazine.

The completed structure weighed close to a thousand pounds, requiring a block and tackle to hoist it in position. With time ticking away Dr. Damadian decided to junk the second dewar even though the magnet would not have as controllable a field.

In a quest for much needed funding, Dr. Damadian attempted to meet with President-elect, Jimmy Carter, in Plains, Georgia. Unfortunately, the President was not approachable at that time. Just when the funds were running out, a Benefactor supplied enough money to finish the project.

(Cont. on page 3)

Damadian (cont. from page 2)

With the new funding, the large storage container and dewar were completed. Still, small leaks were costing thousands a week in lost liquid helium.

A coil to wrap around the patient was still needed to complete the machine. They found that the equations for determining capacitors were faulty. While they were accurate enough to build very small antennas, they were useless for anything larger. Goldsmith built fifteen coils before an adequate one was constructed. He couldn't understand why a fourteen-inch coil worked and a sixteen-inch coil wouldn't.

When completed, the machine was christened "Indomitable", for all the work and unyielding spirit it took to build. It resembled the slowly turning wheel at an amusement park that turned while people tried to walk through. Across the center of the wheel was a wooden plank with the coil attached.

Turning the magnet on, Damadian noticed that its field would drift, so the power was reduced. Tubs of water containing nickel chloride were used as phantoms to test for a detectable signal. A turkey (dead) was then tested and its interior was clearly outlined. Next Dr. Damadian tried to scan himself. As he sat in the machine, it was turned on but nothing happened. The antenna had to be adjusted due to too much interference in the signal-to-noise ratio.

On July 3, 1977, the first human image from the "Indomitable" was obtained. It was a cross-section of Larry Minkoff's chest. The image revealed the heart, lungs, vertebrae and musculature. Damadian's team was overjoyed! Wine was opened for the occasion.

Damadian wrote "Fantastic success, first human image, completed in amazing detail." This first scan required Minkoff to be moved over sixty positions with 20 to 30 signals taken from each position. These signals were then averaged and produced an image on the screen.

Dr. Damadian quickly called a news conference. Congratulatory telegrams poured in from all over the world. Among them were messages from Purcell and Mansfield. However, Damadian's team had little time to savor the triumph. The next hurdle was to lower the time needed to produce an image. A major problem was the signal-to-noise ratio.

Throughout the fall of 1977 and early 1978, the time it took to produce a scan was brought down from hours to just 38 minutes. A representative from General Electric went to see the "Indomitable" and soon after, word was that GE was building their own scanner. Johnson and Johnson also showed an interest though nothing ever came of it.

- ***On July 3, 1977, the first human image from the "Indomitable" was obtained. It was a cross-section of Larry Minkoff's chest.***

In early 1978 Dr. Damadian formed the FONAR Corporation. Damadian and his Brother-in-law set out to raise funds for the new company. Slowly, investors took stock in the company. Dr. Damadian decided that the company would build NMR machines using a permanent magnet instead of a superconducting type. He felt that superconducting magnets would be too much trouble for the hospitals to bother with. Both liquid helium and liquid nitrogen would have to be on constant supply, a very costly prospect.

(Cont. on page 4)

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ARMRIT
"Because MRI is a Specialty"

Oregon to License MRI Techs, ARMRIT Included (cont. from page 1)

The result of the culmination of many steps leading to a fair decision recognizing each medical imaging modality as a separate and distinct specialty. These steps, beginning with "Open Public Meetings" held in October 2005, and January, March, and April 2006, to address questions posed by Senator Avel Gordly of the Ways and Means Committee, and to report back in 2007. The Committee questioned, "Why are there unregulated modalities of the imaging profession?" Attended by all concerned parties, the issue addressed was the consideration of a state license for all medical imaging modalities that were not licensed at the time. Promoted strongly by the X-Ray (RT) lobby, and all of its national and local entities, the original proposed license would have required all medical imaging technologists be educated, certified and licensed as an X-ray tech (RT) to obtain a license.

- ***Oregon Board of Medical Imaging has included ARMRIT certification as a requirement to be eligible for a Medical Imaging Technologist License to practice MRI Technology.***

To be specific, the original license proposal meant that if your specialty is MRI, Ultrasound, Nuclear Medicine or X-ray, you would be required to complete an X-ray technologist program (usually 2 years) prior to being eligible for an Oregon license.

Realizing that, like most states, their laws were thirty (30) years obsolete, and the Oregon Statutes and Administrative Rules governing the OBRT have not kept up with the advances in medical imaging technology. The Board members were encouraged by Rep. Greenlick, Chair of the House Health Care Committee, to use public sessions to prepare for resubmitting the bill for the 2009 Legislative Session.

Thanks to Aaron Carroll and William (Bill) Woodward, ARMRIT certified MRI techs working in the state of Oregon, and a large contingent of Ultrasound techs certified by the American Registry of Diagnostic Medical Sonographers (ARDMS), the committee was educated and informed of the realities of today's medical imaging specialties. This was an eye opener for the committee as both groups represented modalities employing non-ionizing radiation.

- ***...the original license proposal meant that if your specialty is MRI, Ultrasound, Nuclear Medicine or X-ray, you would be required to complete an X-ray technologist program (usually 2 years) prior to being eligible for an Oregon license.***

This process has also led to a change in the Oregon Board of Radiologic Technology (OBRT), which consisted of only Radiography professionals. Newly changed to the Oregon Board of Medical Imaging (OBMI) which consists of, "One of each type of subspecialty from each medical imaging modality, one physician from each type of subspecialty which employs medical imaging, and two public members". Aaron Carroll, ARMRIT certified MRI tech, is a member of this newly formed body.

(Cont. on page 4)

Damadian (cont. from page 3)

In the latter part of 1978, Damadian completed the design of his first permanent magnet for an MRI machine, christened "Jonah". At five hundred gauss (0.05T) it was the first practical permanent magnet for imaging. In order to sell this model, Damadian knew he had to make it more aesthetically pleasing.

An Italian sculptor was hired to design the shell as Dr. Damadian was impressed since he toured Italy. After refinements to the electrical system, by early 1980 the QED 80 was completed, the first commercial MRI scanner.

In the spring of 1980, the QED 80 was shown to the world at a radiologic show. Four prototypes were built and by the end of the year were installed in Cleveland, Mexico, Italy and Japan. Since the FDA had not yet approved the scanner, they were only used for clinical testing at this point. A year later, at another radiological show, a competitor presented their new machine, a superconductor at over three thousand gauss (0.3T). The clarity of the pictures it produced had far better signal-to-noise ratio (SNR). Damadian knew he had to build a permanent machine of at least 0.3Tesla. Since a permanent magnet of this size had not been built before, Damadian's team went back to burning the midnight oil. The new magnet weighed approximately 100 Tons (200,000 lbs.).

Called the BETA 3000, FONAR's latest machine was given critical acclaim for its high resolution images. Orders began to arrive on a steady basis. At this time, the magnetic resonance imaging industry expanded rapidly with about thirteen different manufacturers. Dr. Damadian considered them all to be infringing on his patent since he had not given them license to use his technology.

While most companies produced superconducting magnets, FONAR alone was producing the permanent type. In 1983, FONAR introduced a mobile scanner, installed on a moving van size truck. Designed with a minimum fringe field to avoid elaborate shielding precautions which would be very expensive.

- ***MRI is the internal imaging breakthrough of the century and the benefit of non-ionizing radiation is immeasurable.***

Today, FONAR Corporation headquarters in Melville, New York has supplied MRI scanners worldwide. Dr. Damadian is still in the ring fighting the competition on patent infringement. The outcome of these cases should be very interesting and will set an interesting legal precedent for the MRI field.

Once scorned by the scientific community, Magnetic Resonance Imaging, pioneered by Dr. Damadian has become the most precise imaging modality in the diagnosis of pathology of the brain, spine, heart, abdominal and pelvic areas, etc... Indeed, it can be safely stated that MRI is the internal imaging breakthrough of the century and the benefit of non-ionizing radiation is immeasurable.

It is surely the greatest advance in the medical imaging field since the invention of the X-Ray machine one hundred years ago. As Henry Ford revolutionized the transportation industry nearly eighty years ago, likewise, Dr. Raymond Damadian revolutionized the medical imaging field in our time. He is truly the "Henry Ford of MRI".

Thomas V. Doherty

Oregon to License MRI Techs, ARMRIT Included (cont. from page 3)

The State of Oregon is an example for all states considering updating their current standards and legislation for the medical imaging modalities. Oregon authorities, in a power point presentation, made clear **their expectations:**

1) Protection of the public from unqualified or unethical healthcare providers.

2) Limiting harm from diagnostic imaging devices.

3) Increased public confidence in medical imaging practitioners throughout Oregon.

At the same time, made clear what they **intended to avoid**:

A. Multiple agency licenses for persons working in more than one modality.

B. Legislating anyone out of their job.

C. Decreasing availability of services in rural areas.

Awarded by the State of Oregon Board of Medical Imaging, the new license states, "Practice of Magnetic Resonance Imaging" (see page 5). In a letter in June 2010 to James F. Coffin, ARMRIT President (see page 6), the Executive Director of the, then OBRT stated "We are pleased to be able to license your registrants and look forward to building a great working partnership with you and your staff in the future".

- ***Awarded by the State of Oregon Board of Medical Imaging, the new license states, "Practice of Magnetic Resonance Imaging"***

Again, to the fair minded Oregon authorities, our ARMRIT MRI techs, Aaron Carroll and Bill Woodward, and the Ultrasound techs residing and working in Oregon, Thank You All.

James F. Coffin, President

CONTINUING MEDICAL EDUCATION (CME) REQUIREMENT

Bellerose, NY

Registry Active Certified MRI Technologists:
All ARMRIT Certified MRI Technologists are required to renew their certification before expiration and must submit evidence of six (6) CME credits per year for a total of twelve (12) CME credits in MRI Technology as awarded by the AMA, ACCME, AHRA, or other material found suitable by the board of directors

New Certified MRI Technologists:
New ARMRIT Certified MRI Techs are **not** required to submit evidence of CME credits until their third calendar year of certificate renewal, including the year the Certified Tech successfully completed the examination.

CME Topics:
Continuing medical education credits must be derived from topics related to Magnetic Resonance Imaging technology and/or MRI patient care and safety.

Note: Subjects other than MRI will not be accepted.

General Information

To update your contact information**,** send an e-mail to:

armrit@msn.com

To Verify a Tech's Certification:
E-mail a request to ARMRIT@msn.com
Provide Full Name & Registry Number.

Renew your CPR/BLS on-line visit www.armrit.org and Click on the: Pro CPR Box

Oregon Awards MRI License to ARMRIT Certified MRI Techs

OBMI #912038

STATE OF OREGON
BOARD OF MEDICAL IMAGING

EFFECTIVE DATE
July 12 2010

PRACTICE OF MAGNETIC RESONANCE IMAGING

AARON RICHARD CARROLL
MRIT (ARMRIT)

Issuing Authority:
No. ORS 688.405 through ORS 688.605

Expiration Date: October 1 2012
201007120038-4574-0828

ORIGINAL MUST BE POSTED IN CONSPICUOUS PLACE - NOT TRANSFERABLE

OBMI #912083

STATE OF OREGON
BOARD OF MEDICAL IMAGING

EFFECTIVE DATE
July 22 2010

PRACTICE OF MAGNETIC RESONANCE IMAGING

TIMOTHY ROBERT SMITH
MRIT (ARMRIT)

Issuing Authority:
No. ORS 688.405 through ORS 688.605

Expiration Date: December 1 2012
201007220048-3002-0828

ORIGINAL MUST BE POSTED IN CONSPICUOUS PLACE - NOT TRANSFERABLE

OBMI #912021

STATE OF OREGON
BOARD OF MEDICAL IMAGING

EFFECTIVE DATE
July 10 2010

PRACTICE OF MAGNETIC RESONANCE IMAGING

WILLIAM JEFFREY WOODWARD
MRIT (ARMRIT)

Issuing Authority:
No. ORS 688.405 through ORS 688.605

Expiration Date: May 1 2012
201006290009-7114-0828

ORIGINAL MUST BE POSTED IN CONSPICUOUS PLACE - NOT TRANSFERABLE

Oregon Board of Radiologic Technology

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800 NE Oregon St, Suite 1160A
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Good Morning Mr. Coffin,

I am writing this memo to you, James to formally ask for your assistance. The Board and staff are extremely honored to finally have the authority to offer licensure to Magnetic Resonance Imaging technologists in Oregon.

The Board is in the final approval process of our Oregon Administrative Rules (OAR) that will help the Board implement HB2245, which gave the Board the legislative MRI, Nuclear Medicine and Sonography to its oversight and licensure. The law takes effect on July 1, 2010 and we would like to notify as many Oregon MRI technologists directly as possible.

We have been gathering mailing lists from the registries and professional societies in an effort to meet the Boards objective. Being a staff of three, we have been incredibly busy getting ready for our new licensees. In addition, we will have a new Board name on July 1, 2010 of the Oregon Board of Medical Imaging (OBMI). It is more conducive to the field of medical imaging as a whole instead of just one group of technologists.

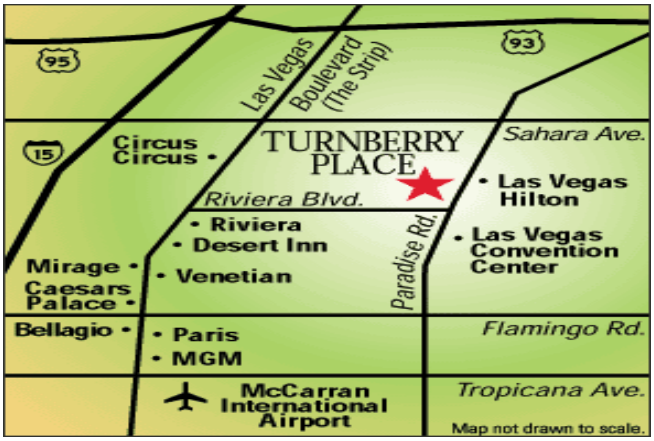
James if you could provide us with a mailing list of your Oregon MRI Technologists, including their email addresses, if you have them, it would be very helpful. Our lists are in Excel; if this format were available, it would help expedite the process as it could be attached in an email. If there is a fee associated with, your list please let me know as soon as possible. I would need to have a check sent from Salem.

We are pleased to be able to license your registrants and look forward to building a great working partnership with you and your staff in the future. If you have any questions please do not hesitate to contact me directly at 971-673-0216 or cell 503-260-2727.

Take Care — Linda

Agenda: ARMRIT 2010: 5th Annual Meeting & Seminar - October 21-23

Stirling Club-Turnberry Place, 2827 Paradise Road, Las Vegas, NV 89109



Thurs. Oct. 21: 7:00-9:00 pm: *Registration & Cocktail Reception*
Fri. Oct. 22: 7:30–8:45 am: *Registration & Breakfast Provided*
8:45–9:00 am: *Opening Remarks - Wilfrido M. Sy, MD Chairman & Executive Director*
Welcome & Overview - James F. Coffin, President

PLENARY SESSION: Friday Oct. 22 Moderator: Wilfrido M. Sy, MD

Time: 9:00am **Keynote -** "The History and Genesis of MRI, A Machine Called Indomitable"
Raymond V. Damadian, MD President & CEO, Fonar Corporation, Melville, NY

Time: 10:00am "CMS Diagnostic Imaging Accreditation Requirements"
Leonard Lucey, Senior Director, American College of Radiology
Moderator: Albert D. Cayton, MD

Time: 11:00am "EPI: Part I - MR's Great Enabler: Understanding the Basics"
Thomas Schrack, ARMRIT, Mgr MR Educ./Tech. Development Fairfax Rad. Consults., PC

Noon: *Lunch Provided*

Time: 1:00pm "EPI: Part II - MR's Great Enabler: "Applications and Implication"
Thomas Schrack, ARMRIT, Mgr MR Educ./Tech. Development Fairfax Rad. Consults., PC

Time: 2:00pm "Functional MRI (fMRI)" Stephen M. Dashnaw, ARMRIT, Columbia University, NY, NY

Time: 3:00pm "MRI of Lower Extremity Sports Injuries", Sean Beaty, MD, Rad. Specialists, Ltd., LV, NV

Saturday Oct. 23 ***7:30–9:00am:*** *Registration & Breakfast Provided*

Moderator: Paul Heubeck

Time: 9:00am "MRI-PET Fusion Imaging", William J. O'Connell, Dr.PH, Columbia University Medical Ctr., NY

Time: 10:00am "MRI & PET-Spect", Karin Knesaurek, Ph.D., Mount Sinai Medical Center of New York

Time: 11:00am "Breast Imaging & Biopsy", Tim Smith, ARMRIT, Providence Health Systems, Portland, OR

Noon: *Lunch Provided*

Moderator: William J. O'Connell, Dr.PH, DABR

Time: 1:00pm "MR Cholangio-Pancreatography", Timothy Troncale, RT(R)(MR), ARMRIT, CPI, Alliance Imaging, CA

Time: 2:00pm "Cardiac MRI: Advantages & Pitfalls of 3T Cardiac Imaging / Plane Alignment, A Clinical Perspective", William J. Woodward, ARMRIT Oregon Health Sciences University

Time: 3:00pm "New Techniques and Works in Progress, William J. Woodward, ARMRIT, Oregon Health Sci. Univ.

Time: 3:45 pm: Closing Remarks - James F. Coffin, President

Accreditation: this course meets all criteria and has been approved by A**HRA**: **12 Category A** Continuing Education Credits.

Visit www.armrit.org and Click on the Acteva Box! Register now Actéva

For Accommodations at the World Famous **Las Vegas Hilton** thru September 21, 2010.
Call Directly at: **800-635-7711** between 6:00am to 12am Daily.
Ask for Rooms for the **ARMRIT group** – Rates: Premium Rooms $99 per night. Single or Double.

Or

For More Affordable Reservations at the **SAHARA Hotel and Casino:**
Rooms $32 Thursday and $67 Friday & Saturday Per Night
Suites $70 Thursday and $105 Friday & Saturday Per Night
Thru October 1st only!!!

For reservations call the Sahara Hotel toll free number: 888-696-2121

State that you are with **ARMRIT 2010**. When making the reservations, request for a higher floor at the 12th floor or above, as these are deemed the preferable rooms.

All registrants are encouraged to **book early** for preferred accommodations!

ARMRIT 2010 - REGISTRATION FORM

Name ARMRIT Certificate# / Non-ARMRIT

Address

City, State/Province, Zip/Postal Code, Country

Telephone Fax

E-mail

Emergency Contact Name and Telephone

***Registration Fees:**	**July 1, 2010 – On site**	
ARMRIT Tech (Oct. 21 - 23)	$400	$
ARMRIT Tech Oct. 22 Only!	$225	$
ARMRIT Tech Oct. 23 Only!	$225	$
Non-ARMRIT (Oct. 21 - 23)	$425	$
Non-ARMRIT Oct. 22 Only!	$250	$
Non-ARMRIT Oct. 23 Only!	$250	$
*Non-Attendee Spouse or Guest for Cocktail Reception – Oct. 21	$75	$

Total $ _____

Payment Options: Check ___Money Order___ Check or MO payable to: ***ARMRIT***

Pay by Credit Card: (check one) Master Card ____ Visa ____ American Express____ Discover _____

Card Number: _____ Expiration Date: _____

Name of Cardholder (Print): _____

Authorized Signature: _____Date: _____

Mail Registration Form To: 8815 Commonwealth Blvd. or Fax: 718-347-8691
Bellerose, NY 11426

SPECIAL NEEDS: If you have any special needs or dietary requirements, please let us know so that we may do our best to accommodate you. Contact ARMRIT at 718-347-8690 or e-mail ARMRIT@msn.com

Cancellation Policy: A refund (less a $100 administrative fee) will be processed for any cancellation made in writing prior to September 1, 2010. No refunds after September 1, 2010

Fold Here & Mail

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