



# SCBT-MR **Spotlight**

SCBT-MR Quarterly Newsletter

Editors: SCBT-MR Communications Committee

Summer | 2014

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### President's Address



The first two commentaries in this series focused on the amazing story of innovation and invention that has fueled the development of advanced medical imaging over the last several decades - and the importance of continuing

this process. Yet, the biomedical science community has been slow to acknowledge and recognize imaging science as a productive area of research. The founding of the National Institute for Biomedical Imaging and Bioengineering at the NIH in 2000 was an important milestone in this regard.

Historically, efforts to assess the productivity of biomedical research have focused on metrics such as scientific publications and other traditional academic criteria. While these are

and medical care. A recent article entitled "Patents as proxies: NIH hubs of innovation", published in *Nature Biotechnology*, provides a new perspective on the return on investment for NIH-funded research that has interesting implications for radiology and imaging science [1]. The article examines the number and quality of inventions resulting from NIH-funded research and showed that productivity varies widely by institute. On average NIH-funded research produces 2.4 reported patented inventions per \$100 million invested. The article also showed that the average quality (or practical value) of NIH patents is high - approximately twice that of patents generated in a comparable private sector setting.

The significant finding for the Radiology community is that research funded by NIBIB has been remarkably productive according to these metrics in the decade since its founding, yielding approximately 7 times the invention volume per dollar and twice the average quality of patents compared with the results of the NIH overall. These findings are of obvious interest to policymakers and research leaders who may wish to take into account these metrics as a useful new dimension for assessing return-on-investment in order to help prioritize future investments. They also underscore the incredible pace of "use-inspired innovation" in medical. The next commentary in this series will focus on new opportunities for the Radiology community to re-imagine and re-invent advanced medical imaging - especially in the area of CT and MRI.

[1] Kalutkiewicz MJ, Ehman RL. *Nature Biotechnology* 32, 536-7 (2014)



## Annual Meeting 2014



September 27 - October 1, 2014

Ritz-Carlton New Orleans

\$215.00 per night Single/Double plus applicable taxes

Group Code:

- RMVRMVA (Deluxe King Accommodations)
- RMVRMVB (Deluxe Double Accommodations)

**Reservation Deadline: Friday, September 5, 2014**

SCBT-MR 37<sup>th</sup> Annual Course

September 27 – October 1, 2014

Things are well underway for one of the SCBT-MR's most exciting meetings yet – in one of the most beautiful cities in the country! The SCBT-MR 37<sup>th</sup> Annual Course will be held in New Orleans from September 27 through October 1, 2014 and anticipates a successful collaboration with renowned experts in the field of body imaging. Opportunities for registrants will include networking with peers, face time with faculty experts, and even becoming an active participant in the program. Attendees can expect a new program format this year, which includes two

Keynote Speakers, a total of eight interactive workshops, and an entire afternoon dedicated to scientific research.

In addition, ever popular sessions such as Round Table Discussions, Cases We'd Like to Do Over, and the Image Interpretation Panel are back. Join the experts for an informal early morning discussion on the latest hot topics, and be sure root for your favorite speakers during the Panel and Missed Cases sessions! Active SCBT-MR members can be a part of the action by volunteering to co-lead a Round Table Discussion. Paid registrants for the FULL meeting will receive a DVD of the 2014 SCBT-MR Annual Course. The DVD content will contain the necessary SA-CME to meet the three-year requirement.

The Ritz-Carlton New Orleans is located on the edge of the French Quarter on Canal Street, one block from Bourbon Street. It offers guests easy access to the city's most popular and unique attractions. The renowned Garden District is nearby, and the Louis Armstrong New Orleans International Airport is just minutes away. Local area attractions include the French Quarter, Mardi Gras World, Audubon Institute Insectarium, Audubon Institute Aquarium of the Americas, Audubon Institute Zoo, and Magazine Street. Registration is open now, so be sure to take advantage of the Early Bird rates. After July 25<sup>th</sup> the prices go up. For more information about registration, lodging, or how to volunteer, please visit the SCBT-MR website: [www.scbtmr.org](http://www.scbtmr.org).

We look forward to seeing you in The Big Easy in September!

For more information about registration, lodging, and how to participate as a volunteer, please visit the SCBT-MR website meeting page at: [SCBT-MR 37<sup>th</sup> Annual Course](#)

We look forward to seeing you in The Big Easy in September!



## Councilor Report on AMCLC

Dear SCBTMR Board:

I write to give you a report of my activities as SCBTMR Associated-Society Councilor at the recent ACR 2014 AMCLC meeting in Washington DC.

I attended the meeting Sunday through Tuesday (April 27-29).

On Sunday I joined the Western States caucus where we discussed patients receiving their own radiology reports and CDS. I also listened to the presentation by candidates for open positions - Lincoln Berland's clearly was the best (he won!)...

On Monday I attended the Reference Committees breakfast and listened to the presentation by Kimberly Applegate plus sat with the Sponsored Society representatives. I also consulted with Reference Committee about the 2 resolutions where SCBTMR was a co-sponsor (CT colonography and pediatric CT).

I attended the open microphone session of the Council - but there were no discussions of either of our 2 resolutions. Lincoln was elected on Monday morning. In the afternoon, Reference Committee 3 did not ask for input from SCBTMR - both our resolutions were well written and quite clear with no apparent controversy.

On Tuesday I attended the economic forum. I was later available for the report out of the finalized resolutions from our Reference Committee, but there was no discussion requested and no comments were needed.

Just pointing out that this is the third year of my 3 year terms as the SCBTMR representative to the Council. Your options going forward are to appoint me to another three year term or to appoint a new representative. An advantage to reappointing me is that I now have a fair degree of understanding of the ACR AMCLC meeting processes - which are quite opaque and complex. An advantage of appointing someone new is new blood and ideas.

Regardless, I will be attending the 2015 ACR AMCLC meeting as part of the faculty for the educational/scientific portion (The meeting is

adding this new portion in 2015 and enlarging). Dr. Sahani will be attending too for the same reason - and perhaps other folks may be as well.

Thanks - as always - for your support and the opportunity to serve....

Very Best,  
Bill S.

*William P. Shuman, M.D. FACR FSCBTMR FSCCT  
Vice Chairman and Professor, Department of Radiology  
University of Washington, School of Medicine  
Director of Radiology, UW Medical Center*

### RSNA Diagnosis Live™ at SCBT-MR Masters in Body Imaging 2014 in New Orleans

Join the fun with **RSNA Diagnosis Live™**, the interactive way to learn and test your knowledge. Using your own personal wireless device, play along by answering questions during the sessions on Monday. Bring your charged mobile wireless device (tablet recommended, phone or laptop to participate. View and interact with cases and questions along with the experts in Musculoskeletal, Gastrointestinal and be part of the Team Competition Image Interpretation Panel.

Top



Information Overload

## Running On All Cylinders

(reprinted with permission from the ACR Bulletin, June 2014, Vol. 69, issue 3)

By Chris Hobson

The common perception of Japanese efficiency has its roots in many facets of the nation's past. One of these aspects is its history of whaling. Since Japan's mountainous topography made it hard for inhabitants to cultivate livestock, around 12,000 B.C. they turned to whales for sustenance. Although the modern practice of whaling has drawn ire due to the brutality of poachers worldwide, in ancient times, the Japanese held the animal in such esteem that it became tradition to show respect by using every part of it to produce meat, clothing, and fuel.

Over the millennia, this custom of leaving nothing to waste made its way into Japanese auto manufacturing. The first proponents of cutting inefficiencies in this process were the heads of the Toyota Corporation in the 1930s. These leaders sought to improve upon the revolutionary yet rigid production methods pioneered by Henry Ford by adding value to their product and eliminating inefficiencies.<sup>1</sup>

### The Lean Approach

Dubbed "lean production" in the 1980s, Toyota's approach to work "demands a commitment to a set of principles that allow people and organizations to become and remain efficient."<sup>2</sup> The business strategy has only recently been applied to medicine, with great success in many cases. The net effect of integrating the strategy into the field of radiology is to provide customers – both referring physicians and patients – with a higher level of value through continuous improvement.

Waste can take many forms, a few of which include using out-of-date protocols, requiring patients to wait due to inefficient scheduling, underutilizing equipment, and storing more supplies in inventory than is necessary.<sup>3</sup> The practice of radiology is a very complex process, notes Lucy W. Glenn, MD, chief of the department of radiology at the Virginia Mason Medical Center in Seattle, which makes it a good fit for the lean process. "Any time you're

dealing with a complex process, you need a tool to simplify operations and look at them in a standardized fashion," she says.

Virginia Mason was among the first health systems in the U.S. to implement lean, a transition that began with a simple conversation on a plane flight. "A member of our executive team happened to be sitting on an airplane next to a lean consultant," says Glenn. "Lean hadn't been attempted in health care, but the consultant explained to him how the approach could apply to medicine. By the end of the flight the Virginia Mason representative agreed with him." And the rest is history.

In 2002, the hospital's executive team, along with chairs from each department, traveled to Japan to learn more about the process at its source. After spending a few weeks observing how lean worked within companies as diverse as Toyota and Hitachi, the leaders came back and instituted lean training workshops for the health system's vice presidents and administrative directors. Once top level staff became lean certified, others, including staff in the radiology department, were taught the same principles.

### How It Works

Although lean is not a one-size-fits-all system, its principles can be customized to fit almost any radiology practice or department. Some of these aspects include the following:

Involve all staff members in identifying inefficiencies. The first order of business when implementing lean is to involve all staff members in identifying sources of waste. This principle has two benefits. First, frontline staff members, such as techs, may know of wasteful practices of which radiologists may be unaware. In addition, if staff members are brought in to help point out problem areas, they become more invested in the process and, by and large, are more likely to take ownership of maintaining an efficient workflow. "If a manager came up with a whole new way of doing something and imposed it on the staff, it would flop because he or she didn't involve them in mapping out the change," says Glenn. "You have to lay the groundwork."



Standardize the workflow. In a complex ecosystem of scheduling, testing, and reporting imaging study results, minimizing variations wherever possible can save time and money, enhancing value to both patients and referring clinicians. Samir B. Patel, MD, a diagnostic radiologist at Radiology, Inc. in Elkhart, Ind., explains how, after earning a lean black belt certification in health care, he was able to save the hospital money by simplifying its intravenous contrast inventory. “For CT examinations requiring intravenous contrast, three types of contrast were available to choose from,” he says. “There was no standardization for when to choose which contrast type. After reviewing the literature, and referencing ACR Appropriateness Criteria® and the Manual on Contrast Media, the radiology department streamlined to only one type of contrast, saving the hospital hundreds of thousands of dollars with no adverse patient outcomes.”

Go to the gemba. The “gemba” is a Japanese term meaning “the place where the real work is done.” Given the successive cuts in radiologists’ Medicare reimbursements over the past few years, it is no wonder that many prefer to remain in the reading room, churning through more and more studies to maintain reimbursement levels. The lean process, however, requires that physician leaders step out from behind their PACS and walk the floor of their practice or department. This exercise allows staff members and physician leaders to interact in important ways. “We participate in gemba walks, where we actually go to the different areas on a routine basis,” says Jonathan B. Kruskal, MD, ChB, PhD, professor of radiology at Harvard Medical School and chair of the department of radiology at Beth Israel Deaconess Medical Center. “We are able to engage staff to seek feedback about opportunities for improvement.”

Despite the fact that these are time-tested methods of enhancing value to patients and referring clinicians, it may take some time to obtain staff buy-in. “We have found that the administrative and technical staff have been far easier to train and become more involved in the processes than the physician staff,” admits Kruskal. “By the very nature of technical work, the different modalities are ideally suited to the lean approach. Physicians have always focused more on their

diagnostic and procedural work and we have had to work especially hard to get the physicians engaged.” Glenn agrees that implementing such thorough change in an organization will produce pushback from employees. “We had pushback from all levels in the beginning,” states Glenn. One of the top complaints from staff, she says, was that patients are not the same as cars, and that such a system cannot work in an environment where every patient is different. However, Glenn adds, this is an erroneous impression because most of the standardization is built around the process and not the treatment. She advises that it will take about five years to get everyone on board.

### Tools of the Trade

The quality control tools now associated with lean were derived from research conducted three decades ago by the Union of Japanese Scientists and Engineers.<sup>2</sup> These instruments, which are used to remediate inefficiencies, include flow charts, value-stream mapping, annual operating plans, and management dashboards. If used effectively, they can help increase staff productivity and create a less cumbersome process for patients and referring clinicians alike.

Kruskal notes that his department utilizes several of the standard lean tools to maintain efficiency at all times, including a variety of “countermeasures.” Countermeasures are “steps that are introduced to improve performance in a particular process.”<sup>2</sup> Kruskal says, “These countermeasures typically would involve standardized work processes, such as mistake-proofing by using, for example, checklists and visual systems like posters and sign boards.”

But while using these tools may help keep everyone on the same page, they aren’t mandatory in order to accomplish enduring improvements. Patel says that when he decided to make it a point to begin identifying inefficiencies, he didn’t deploy a whole range of tools. “I didn’t do any surveys,” asserts Patel. “I just went around and talked to the ER physicians and asked them what gave them angst. I collected that information and then went back to them later and said, ‘This is where I think we have some defects, and here’s what I’m proposing we do about it.’ In essence, I got out of the reading room and started asking questions. It doesn’t have to be a sophisticated process.”



The lean approach is a way for radiologists to increase their value without investing a great deal of capital. By breaking down silos and opening the flow of communication – and by asking staff members to be more aware of their environment – radiology practices and departments can operate at full capacity. In fully embracing the team-based approach to management that lean requires, radiologists will make true the ancient Japanese proverb: “A single arrow is easily broken, but not ten in a bundle.” //

1. Lean Enterprise Institute. “A Brief History of Lean.” <http://bit.ly/LeanInstitute>. Accessed May 7, 2014.
2. Kruskal JB, Reedy A, Pascal L, Rosen MP, Boiselle PM. “Quality Initiatives: Lean Approach to Improving Performance and Efficiency in a Radiology Department.” RadioGraphics. <http://bit.ly/LeanApproach>. Accessed May 7, 2014.
3. TriMed staff. “RSNA: Is Radiology Ready for Lean?” HealthImaging. <http://bit.ly/RadiologyLean>. Accessed May 7, 2014.

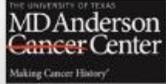
## **SUBMIT HERE** **Case of the Quarter**

Summer 2014

Click below to view.

**Malignant renal epithelioid  
angiomyolipoma with liver metastasis  
after resection**

Vicens RA, Jensen CT, Korivi BR  
and Bhosale PR

  
The University of Texas  
MD Anderson  
Cancer Center  
Making Cancer History

[cjensen@mdanderson.org](mailto:cjensen@mdanderson.org)

SLIDE 2 OF 18

[Submit a Case Topic for Consideration](#)

**The Society of Computed Body Tomography &  
Magnetic Resonance is now accepting  
nominations for 2014 Fellow Members.**

Please use the following link to complete the  
SCBT-MR 2014 Application for Fellow Membership.  
<http://www.scbtmr.org/Membership/FellowNominationForm.aspx>

**All materials must be received by August 25,  
2014. No nominations will be accepted after  
that date.**

**Submit Your Nominations to SCBT-MR TODAY!**



## Radiologist Jelle Barentsz Knighthood.

Based on international and national recommendations and evaluation letters of top experts, on Friday May 2014, Mayor Mr. Paul Mengde gave Professor Jelle Barentsz with one of the highest Royal Decorations: he became the **Knight in the Order of the Dutch Lion**.

Dr. Barentsz is since 1998 professor of Radiology at the RadboudUMC from the Radboud University in Nijmegen, The Netherlands. Dr. Barentsz is a renown top-researcher with international esteem.

His contribution in imaging prostate cancer and lymph nodes is world famous and unique. He developed with his team new MRI techniques and implemented them in daily care for patients with prostate cancer. By applying his pioneering work to visualize small metastases, he enabled with success focused image guided radiotherapy in patients with prostate cancer. He is one of the top researchers in the field of prostate cancer and lymph node diagnosis. The quality of his work is exceptional, and the translation of his research into daily care makes him even more extraordinary.

Dr Barentsz provides great contributions in inventing and validating new imaging techniques, which can be applied in cancer diagnosis. His current and expected expertise is of critical importance in the development of new MRI-techniques.

The three most important contributions of Dr. Barentsz are: the development and rebirth of the lymph node specific iron-nano-MR contrast agent (Combidex), the discovery and implementation of multi-parametric MRI, which led to the maturity of prostate MRI, and finally the development and

implementation of the PI-RADS scoring system for the structured interpretation of prostate MRI's.

Beside this Dr. Barentsz is respected because he is an empathetic man, and always puts the patient in the middle, and he does not allow any concessions to achieve this goal. His devotion, passion and successes developing improved diagnostic techniques result in a high number of patients from all over the world, who want his advice and imaging. Many national and international physicians visit him, and want to learn his techniques and implement these in their own practice.

### Response Jelle Barentsz:

It is a great honor to get this high decoration, and of course I am very happy. Not only for me and my family, but also for the man with prostate cancer, radiology, our department and our hospital.

This Royal Decoration is an indicator of the societal appreciation for something extraordinary. Therefore, I am very glad that with this Decoration, the value of Radiology –often seen as only a supporting specialism- is recognized being an essential part for the well being of patients with prostate cancer. Any treatment starts with a good imaging diagnosis, and a good diagnosis results in decreased morbidity and decreased mortality. Also, the optimal use of imaging results in “sustainable care”.

I am glad that with this Decoration, also the patient with prostate cancer gets the recognition of his problem, can help him find his way in the maze of his treatment process, and in this way finds his correct personalized therapy.

I still have a few dreams to come true: to reduce TRUS-biopsies, to enable screening of prostate cancer using PSA + MRA, and Global approval for Combidex.

To finish with the Words of an English Knight (Sir Winston Churchill); “This is not the beginning of the end, but the end of the beginning!”



## SCBT-MR Committees

SCBT-MR would like to thank all of its member volunteers. The committees for 2014 are below. Members new to the committees in 2014 are highlighted in **bold**. If you are interested in joining a committee, please contact Stephanie Huppertat [shuppert@acr.org](mailto:shuppert@acr.org). Please include which committee is of interest to you.

### Fellow Membership Committee

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## SCBT-MR's 2015 Annual Meeting





October 7 - 10, 2015  
Westin Harbour Castle  
Toronto, Canada