### OCTOBER GRAND ROUNDS: Visiting Professors

**Albert de Roos, MD PhD** - 5th Annual Sven Paulin Lecture: *MRI in the Metabolic Syndrome: Heart, Kidney, Brain*

**Friday, October 7 • 8:00-9:00 am Sherman Auditorium (followed by a breakfast reception in honor of Dr. Paulin’s 85th birthday on Rabb 3, East Campus - Chest Reading Room corridor)**

We are proud to welcome Dr. Albert de Roos, Deputy Editor of *Radiology* and Professor of Radiology at Leiden University, who will deliver the 5th annual Sven Paulin Lecture entitled *Multi-Organ MRI in the Metabolic Syndrome*. Dr. de Roos received his medical degree cum laude from the University of Amsterdam in 1980 and completed radiology residency training at the University Hospital Leiden, The Netherlands while pursuing a PhD which he received in 1985. A prolific scholar, he has authored more than 576 scientific publications and currently serves as a reviewer for the *European Journal of Radiology*, Magnetic Resonance in Medicine, *Circulation*, *American Journal of Cardiology*, *Journal of Magnetic Resonance Imaging*, *Journal of Computerized Tomography*, *Radiographics*, *American Journal of Cardiology*, *American Journal of Roentgenology* and the *New England Journal of Medicine*. Moreover, he has also served as cardiac section editor for *European Radiology* and *Eurorad* and Associate Editor for *Radiology*. In 2008, Dr. Herbert Kressel appointed him Deputy Editor for cardiac imaging for *Radiology*. In his spare time, Dr. de Roos has organized the Erasmus course in cardiovascular MRI since 1992. This course, part of a European Commission supported education initiative between 12 European Universities aimed at implementing a standard training curriculum, focuses on clinical applications of MR imaging of the heart and vascular system with CT correlation. Please note that the Division of Thoracic Imaging will host a breakfast reception in honor of Dr. de Roos and the 85th birthday of Dr. Sven Paulin immediately after grand rounds in the Chest Reading Room corridor on Rabb 3, East Campus.
I am pleased to announce that our universal protocol initiative also known as Time Out was presented as a training video to the hospital-wide interventional procedure committee to great acclaim. Our QA nurse Misti Mullins, nursing manager Bridget O’Bryan-Alberts and filmmaker extraordinaire Michael Larson created a very attractive and informative educational tool. Thanks also to all the technologists, nurses and attendings who participated. The video is now available on the Radiology QA page: https://portal.bidmc.org/Intranets/Clinical/Radiology/Safety.aspx

DEPARTMENTAL NEWS, AWARDS & HONORS

FROM THE CHIEF
Jonathan B. Kruskal, MD PhD

• S.E.R.V.I.C.E.
Speaking of Grand Rounds, I am grateful to Mr. Robin Brown of Spot-On Ventures for sharing his 35 years of customer service experience with us last month as part of our continuous improvement program. His S.E.R.V.I.C.E acronym is a terrifically simple reminder of the tenets of our healthcare mission. Thanks to Max Rosen for organizing and hosting this Grand Rounds. Thanks to Larry Barbaras for posting this presentation on our grand rounds page for those of us who were unable to attend: https://apps.bidmc.org/departments/radiology/news/rounds/schedule.asp?academicYear=2011

• Time Out Video
I am pleased to announce that our universal protocol initiative also known as Time Out was presented as a training video to the hospital-wide interventional procedure committee to great acclaim. Our QA nurse Misti Mullins, nursing manager Bridget O’Bryan-Alberts and filmmaker extraordinaire Michael Larson created a very attractive and informative educational tool. Thanks also to all the technologists, nurses and attendings who participated. The video is now available on the Radiology QA page: https://portal.bidmc.org/Intranets/Clinical/Radiology/Safety.aspx

OCTOBER GRAND ROUNDS: Visiting Professors

Jon Jacobson, MD - Interventional Musculoskeletal Ultrasound
Friday, October 28 • 8:00-9:00 am Sherman Auditorium

Dr. Jacobson is currently Professor of Radiology at the University of Michigan, Ann Arbor and Director of Musculoskeletal Imaging at the University of Michigan Hospitals. He received his MD with high distinction from Wayne State University School of Medicine in Detroit and completed residency training in diagnostic radiology at the Henry Ford Hospital, also in Detroit followed by a fellowship in musculoskeletal radiology at the University of California, San Diego. A consistently extramurally funded investigator with more than 148 peer-reviewed papers, he has also distinguished himself as an excellent teacher and mentor. In 2000, he and his co-authors were awarded the Silver Medal by the American Roentgen Radiology Society for an "Interactive tutorial of musculoskeletal sonography on the World Wide Web" and in 2007, he received the Cum Laude award from the Radiological Society of North America for "Interventional musculoskeletal ultrasound: Techniques and applications."

Pierre Alain Gevenois, MD PhD - Thoracic Imaging Cases
Wed., October 19 • 8:00-9:00 am Close Conference Room, WCC-4

In addition to our Grand Rounds speakers this month, please note a third distinguished visiting professor, Pierre Alain Gevenois, will be speaking on Wednesday October 19th. Dr. Gevenois is Professor of Radiology at the University of Brussels, Belgium, where he currently serves as chief of the Thoracic Imaging Section. He has published several teaching books, notably on the imaging of chronic obstructive pulmonary diseases and CT dose reduction. He has also authored a large number of research articles and is internationally known for his seminal work on the CT quantification of pulmonary emphysema. Our own Thoracic Imaging section is delighted that Dr. Gevenois will be speaking to the residents at morning conference in addition to addressing the section during their research meeting later on that day.

• Happy 85th birthday, Sven!
In honor of this milestone, we will be celebrating with a birthday breakfast on Friday, October 7th following the 5th annual Sven Paulin Lecture to be delivered by Albert de Roos. The breakfast will be held in the Chest Reading Room area of Rabb-3 in the East Campus. Those of you who were here for Sven’s 80th birthday celebration may remember the "We ♥ Sven" buttons; there wasn’t time to get more of these but we do want him to know that – thanks to Ann Cunha – we Still ♥ Sven!
DEPARTMENTAL NEWS, AWARDS & HONORS

I am pleased to report that 2nd yr resident Gunjan Senapati (working with Robin Levenson) won 3rd place for their poster on RLQ pain etiologies "Beyond Appendicitis". This marks the 3rd year in a row BIDMC has won an award at the American Society of Emergency Radiology annual meeting. Last year, my talk on chest pain imaging (with David Li as lead author) won 1st place, and in 2009, Girish Tyagi’s talk on coronary CTA (on a project with a number of collaborators) won 2nd place, both of these in the oral presentation category.

I would also like to take this opportunity to promote ASER to the residents in particular. Membership for residents is free and provides print and online access to the society’s journal "Emergency Radiology". The website is growing and has great resources for residents, particularly as they go through call. Also, the 1st 50 residents to register for the annual meeting get free registration. Next year’s meeting is in New Orleans, and I will be on the program committee. Although my formal relationship with BIDMC will end soon, I will remain active in the society. I truly hope BIDMC residents take advantage of this offer, and I hope to see some of them in Louisiana next year! Maybe more of them can bring home some “hardware”!

– Marc Camacho, Chief, Emergency Radiology

Congratulations Elizabeth Asch, Jay Pahade and Cathy Wells

2nd yr resident Elizabeth Asch has been selected to attend the Society of Radiologists in Ultrasound (SRU) 2011 annual meeting as part of the Toshiba Residents Program. The meeting will be held October 21-23 in The Westin Michigan Avenue Hotel in Chicago. As a Toshiba Resident she must submit an ultrasound-related case for the Residents’ Page of the SRU website prior to the meeting and the best case, as judged by the SRU Executive Board, will be published in Ultrasound Quarterly, the official journal of the SRU.

2011 abdominal imaging fellow (and now attending at Yale School of Medicine), Jay Pahade and 2011 graduating resident (and now a breast imaging fellows at MGH) Cathy Wells were chosen both by the RSNA Scientific Program Committee to receive 2011 RSNA Trainee Research Prizes for their research projects: “Reviewing Imaging Examination Results Immediately after Study Completion with a Radiologist: Patient Preferences and Assessment of Feasibility” (Pahade) and “Does Mismatch in Breast and Detector Size During Screening and Diagnostic Mammography Result in Increased Radiation Dose?” (Wells). Prizewinners are encouraged to submit a manuscript for consideration for publication in Radiology, Radiographics, or Medical Physics. We’ll be happy to see them at RSNA this year!
On October 12-13, 2011, the Madrid-MIT M+Vision Consortium, http://mvision.madrid.org, will hold its first Open House in Boston with a two-day event to showcase biomedical imaging research and development activities occurring in academia and industry in both Boston and Madrid. The primary goal is to facilitate networking among investigators in both cities and to catalyze relationships that could develop into collaborative projects. Further details will be e-mailed in the coming week.

– Debbie Burstein, Director, Center for Basic MR Research and Functional Imaging of Cartilage Lab

**Publication Call Outs:** BIDMC Radiology article on CT dose reduction


**Consider the Breast and Lungs When Determining Thoracic Imaging Protocols**

Carefully consider the radiation dose to the breast and lungs before deciding which CT protocol to use for thoracic imaging of individual patients, a new study cautions.

The study compared organ doses to the breast, lungs and pelvis using commonly used protocols and found a change in protocol could decrease breast radiation dose by more than 50 percent. “The highest doses to the breast skin and parenchyma were found with our standard thoracic CT protocol (120 kVp, variable 120-320 mA) and the protocol we use to assess for pulmonary embolism in the general population (120kVp, variable 200-394 mA),” said Dr. Diana Litmanovich of Harvard Medical School in Boston, and the lead author of the study. “We found the dose was reduced by more than half when we used our protocol for assessing pulmonary embolism in pregnant or young patients,” (100 kVP, fixed 200 mA), said Dr. Litmanovich.

The standard thoracic CT and the pulmonary embolism protocols also led to the highest radiation doses to the lung, Dr. Litmanovich said. The lung received the highest organ dose regardless of the protocol, while pelvic radiation was low regardless of the protocol, she said.

“Despite efforts to reduce radiation dose, irradiation of the breast and lung remain substantial,” said Dr. Litmanovich. “The study emphasizes the need for caution when we are planning our CT protocols;” she said.

– AJR Press Release by Keri Sperry

**Congratulations to the School of Diagnostic Ultrasound Class of 2012**

Congratulations to Meghan Connolly, Andrea Murphy, Nicole Lafrance, Michaela DeRoche and Nicky Canuel for winning third place in the annual meeting of the Society of Diagnostic Medical Sonographers (SDMS) Student Poster Exhibit Competition in Atlanta. Many of my colleagues have been contacting me from the conference asking for copies of the posters Departmental Ergonomics Survey Parts 1 and 2. Congratulations also for passing the ultrasound physics exams!

– Cory Finn, Program Director, School of Diagnostic Medical Sonography

[Please see page 5 for a reproduction of the posters; we show the authors here as the original posters were entered as blind submissions]
Departmental Ergonomics Survey Part I: Pain & Positioning

INTRODUCTION:
Since the 1980s, sonographers have been reporting work-related injuries for these repeated, static, and repetitive motions. In an effort to improve the well-being of these healthcare professionals, proper ergonomics or lack thereof can be a significant source of injury. The purpose of this study was to better understand the extent of pain, injuries as well as to address ergonomics and education of the sonographers and scanning techniques. The number of sonographers who have had pain due to work or scanning techniques for more than 5 years. In this paper, we will report the results of our survey.

Survey Results:

A. Neck Pain - 75% of sonographers reported neck pain

- B. Shoulder Pain - 72% of sonographers reported shoulder pain

- C. Elbow Pain - 20% of sonographers reported elbow pain

- D. Wrist Pain - 36% of sonographers reported wrist pain

- E. Back Pain - 60% of sonographers reported back pain

Recommendations:
- A. Neck Pain: 
  - Practice strength
  - Stretch before work
  - Pratice posture
  - Make pain worse

- B. Shoulder Pain: 
  - Shoulder elevation
  - Shoulder extension

- C. Elbow Pain: 
  - Elbow flexor stretch
  - Elbow extensor stretch

- D. Wrist Pain: 
  - Wrist flexor stretch
  - Wrist extensor stretch

- E. Back Pain: 
  - Back extensor stretch
  - Back flexor stretch

CONCLUSION:
Based on the survey, we found that neck pain was the most common issue, followed by shoulder, elbow, wrist, and back pain. These findings are consistent with previous studies, which have reported that musculoskeletal disorders and career-ending injuries are common among sonographers. In addition, we found that more than 80% of sonographers report pain when scanning. This highlights the importance of proper scanning techniques and the need for education on ergonomics.

References:
- Oct 2011 Radical Views
- www.soundergonomics.com
- www.sportsinjuryclinic.net/cybertherapist/muscles/allmuscles.php
- B. Mistakes: 
  - Stay away from work
  - Keep your head up

- C. Wrist Extensor Stretch: 
  - Wrist flexor stretch
  - Elbow flexor stretch

- D. Arm Pulling: 
  - Pull your arm up
  - Pull your arm down

- E. Shoulder Stretch: 
  - Shoulder abduction
  - Shoulder adduction

- F. Posterior Shoulder Stretch: 
  - Shoulder abduction
  - Shoulder adduction

- G. Chin Tuck: 
  - Chin tuck
  - Chin tuck

- H. Neck Extension: 
  - Neck extension
  - Neck extension

- I. Shoulder Rotation: 
  - Shoulder rotation
  - Shoulder rotation

- J. Elbow Extension: 
  - Elbow extension
  - Elbow extension

- K. Shoulder Flexion: 
  - Shoulder flexion
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- L. Elbow Flexion: 
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- M. Shoulder Abduction: 
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- W. Shoulder Extension: 
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- X. Elbow Flexion: 
  - Elbow flexion
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- Y. Shoulder Rotation: 
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- Z. Elbow Extension: 
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KUDOS - Please join us in congratulating the following staff for outstanding patient care and service.

**CT**

Congratulations from Dr. Raptopoulos to **April Callahan** and **Nan Hermanns** for providing an excellent example that Image Lightly works. April and Nan followed our dose reduction protocol for a CTPA done on a pregnant patient at 1/3 of the usual CTPA dose... Images were noisy but adequate for diagnosis.

- **April Callahan**
- **Nan Hermanns**

I had received a call from a patient who wanted to share both positive feedback and constructive feedback regarding her recent CT appointment. She unfortunately had a number of concerns but did take a moment to highlight **Kathy Sullivan** for stepping in, introducing herself in a professional manner and offering an explanation of what she wanted to do to obtain venous access. The patient had already been “stuck” a number of times and so she was pleased that Kathy demonstrated such a level of competency and skill and was able to access a vein for the CT. Great Job Kathy!

- Tim Parritt, CT mgr.

**Diagnostic Imaging**

**Sandro Vicente**

**Dyder Parisen**

**Joachin Thomas**

stayed over 8/27 because of the approaching Tropical Storm Irene to ensure AM coverage.

**Dr. Kevin McGuire** (Spine Center) stated that **John Schembri** provides superior quality work and efficiency with spine exams in the OR. Dr. McGuire often pages John to see how late John is working when he is determining if he wants to add on a late OR case.

**John Schembri**

**Patty Peters**

**Marie Alessandro**

**Carmelina Barletta**

are all being recognized collectively by our senior staff. Patty for the attention to care she provides to our patients, Marie for her willingness to help out and strong technical skills and "magic fingers" Carmelina for outstanding IV access skills.

**Nuclear Medicine**

Patients love this "nice boy from Maine". **Aaron Thurston** enjoys people and he is able to find commonality with everyone of any age. He listens and he talks and he makes everyone feel comfortable. For all his patients Aaron turns a stressful, fearful situation into a positive experience. His kindness and thoughtfulness is extraordinary, his interpersonal skills are admirable, and his ability to connect with people is remarkable.

**Dawn Federman** (not shown) does all of the NucMed insurance pre-authorization work. In the past few years this work has grown into a massive effort with more and more NucMed studies being classified as high tech and therefore needing pre-authorization before they can be booked. Dawn communicates with referring physicians, their office staff and their patients, not to mention annoying insurance company voice mail.

Although some of this communication can be frustrating, Dawn never lets that frustration show and is always friendly, polite, and professional.

**Do you know...Daniel Berkowitz?**

Dear Radiology Colleagues,

Daniel Berkowitz joined the BIDMC radiology family at 0053 this morning. He arrived earlier than expected but he’s a healthy 6 lb 7oz, 18in baby. Mom and son are both doing very well.

Since he will be spending many nights awake, we figured Daniel might help decompress the night float by reading some plain films (See right).

- Seth Berkowitz, 2nd yr Radiology resident and now "Dad"
Researchers ask how MRI availability affects imaging exam orders.

Does the availability of imaging equipment play a role in what studies physicians order after a patient has a stroke? That's the question a study by Max P. Rosen, MD, MPH, a radiologist at Beth Israel Deaconess Medical Center in Boston, and colleagues attempted to answer.

Their study, published in the June issue of the *Journal of the American College of Radiology*, compared the imaging of stroke patients at a hospital in the United States with those treated at a hospital in Canada, where access to MRI scanners is more limited, and concluded that capacity does indeed affect imaging utilization.

"There clearly was less frequent use of MRI scanning at hospitals with limited access to this modality," Rosen says.

The study also suggested that MRI imaging after a stroke led to better outcomes. "But this is where we can only infer," Rosen says, "because the study wasn't designed to measure these outcomes."

Rosen and Frank Levy, PhD, a study coauthor and economist who analyzed the data, say their results are preliminary and call for further investigation.

Robert DeLaPaz, MD, chair of the panel that wrote the ACR's appropriateness criteria for cerebrovascular agrees, the study is preliminary and points out that it has major flaws that raise questions about the validity of comparing the use of available technology in the two countries.

The flaws, he says, arise from the incomplete data about the patient population. DeLaPaz believes the researchers should have included the admittance diagnosis, the duration and severity of symptoms and signs on admission, the specific therapy used, and the timing of therapy and details of patient outcomes because "all... are important variables for evaluating the appropriateness use of imaging technology."

The researchers did not look at the admittance diagnosis or when patients arrived at the hospital for treatment. DeLaPaz says, and imaging protocols differ depending on whether more than three (and possibly up to 4.5) hours have passed since the stroke onset. When stroke patients arrive at a hospital within three hours, current guidelines indicate they should quickly undergo a noncontrast CT scan to look for hemorrhage to help determine treatment but not delay treatment with additional imaging.

"If the scan shows there's no hemorrhage and no other contraindications are present, the patients can be treated with thrombolysis," explains DeLaPaz, a professor of radiology and director of neuroradiology at Columbia University Medical Center in New York.

Rosen and his colleagues focused on the treatment of strokes that occurred after the three-hour window and the use of MRI imaging to identify if the brain tissues could be saved. "The study's limited comparison of comorbidities and age between the patients in the U.S. and Canada suggest that the patients in the U.S. were sicker, and, as a result, the hospital used more imaging," Rosen says. "The study's limited comparison of comorbidities and age between the patients in the U.S. and Canada suggest that the patients in the U.S. were sicker, and, as a result, the hospital used more imaging."

The study also included a look at the use of diffusion-weighted imaging in the U.S. and Canada. "The U.S. hospital used diffusion-weighted imaging to identify tissue that may be salvageable," DeLaPaz says. "The treatment for stroke is to identify tissue that may be salvageable," DeLaPaz says. "The treatment for stroke is to identify tissue that may be salvageable," DeLaPaz says. "The treatment for stroke is to identify tissue that may be salvageable,"

After the initial three to four hours, treatment options are different, and more complex imaging is recommended to better characterize the tissue in and around the stroke zone, DeLaPaz says.

It's conceivable that many in the stroke population at the U.S. hospital were late arrivals "and so their subsequent outcome for transient ischemic attacks and "minor" strokes differ markedly from large infarcts in eloquent brain regions, he says.

The study also doesn't indicate whether the severity of the strokes in the two patient populations was different. "The study's limited comparison of comorbidities and age between the patients in the U.S. and Canada suggest that the patients in the U.S. were sicker, and, as a result, the hospital used more imaging," Rosen says. "The study's limited comparison of comorbidities and age between the patients in the U.S. and Canada suggest that the patients in the U.S. were sicker, and, as a result, the hospital used more imaging."
2011 Publications from our Faculty Members [New citations in blue].


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