

Radical Views... from the Department of Radiology

Volume 6, Number 2
Sept 2013



Beth Israel Deaconess
Medical Center



A teaching hospital of
Harvard Medical School



FROM THE CHIEF
Jonathan B. Kruskal, MD PhD

➤ **Thank you Andrew Bennett!**

In the words of Lee Ann Thibodeau RT (R), Interventional Coordinator, Diagnostic Imaging: "I just wanted to put a big **"Thank you"** out to Dr. Bennett. We were able to successfully insert yet another much needed PICC early this am. We really appreciate all that he does for us and our patients."

I also add my thanks to Andrew for his amazing citizenship. In 2012, Andrew won the Joffe Award, an award given in *Recognition of the Faculty Member Who Best Exemplifies the Spirit and All Around Talent of the General Radiologist* and it is doubly gratifying to see him continue this trajectory. Well done, Andrew!



➤ **Congratulations Alexander Bankier, MD, PhD - BIDMC Radiology's newest RSNA Honored Educator Awardee -**



Established in 2011, the RSNA Honored Educator Award recognizes RSNA members who have produced an array of RSNA educational resources in the past calendar year. This annual award is given to individuals invested in furthering the profession of radiology by delivering high-quality educational content in their field of study. This annual award is given to RSNA members who show dedication to furthering the profession of radiology by delivering high-quality educational content for the RSNA and Alex joins Phillip Boiselle, myself, Ronald Eisenberg, Jacob Sosna, and former fellow Atif Zaheer who were recognized as RSNA Honored Educators in 2012.

➤ **Speaking of RSNA, Take the Pledge - I'm glad I did!**

Thank you for your Radiology Cares™ pledge to practice patient-centered radiology. Attached is a printable certificate highlighting your commitment to your patients. Please contact RadiologyCares@rsna.org with any questions, comments or suggestions.

- Jonny

Departmental News cont'd on pgs. 3-4

Radiology Calendar September 2013

Mon	Tues	Wed	Thurs	Fri
2 Weekly Mon Section Meetings: 12:00-1:00 MRI (monthly) [Ansin 2] 3:00-4:00 ED section meeting (monthly) [ED annex, WCC] Labor Day	3 7:30 - 8:15 Nuclear Medicine (TBD) 8:15-9:00 Nuclear Medicine (TBD)	4 7:30 - 9:00 Professionalism (Program Directors) w/breakfast Weekly Wed Section Meetings: 11:00-12:00 MSK clinical conf 12:00-1:00 CardioThoracic, GI/GU Oncology 3:00-4:00 Mammo [TCC-484]	5 7:30 - 9:00 Nuclear Medicine - Safety (Sr. Nucs Tech - Peggy) Weekly Thurs Section Meetings: 12:00 - 1:30 Abd [WCC-354] 12:00-1:00 MSK 1:30-2:00 East MedRads - Nukes Senior [TCC 484]	6 7:30 - 9:00 Technology and Radiology (Berkowitz)
9 7:30 - 9:00 MSK (TBD) 12:00-1:00 Mentorship Meeting: Endnote (Paul Bain, HMS Countway Library) [Shapiro (TCC)-484] 1:00-2:00 Body MRI meeting [Ansin 2]	10 7:30 - 9:00 MSK (TBD) 10:30-11:30 NMMI meeting [GZ-103]	11 7:30 - 9:00 MSK (TBD) 7:15 - 8:00 US meeting (WCC-304A Gallery)	12 7:30 - 9:00 MSK (TBD)	13 12:00-1:00 Grand Rounds: Digitization of Medicine: How Radiology Can Take Advantage of the Digital Revolution (King Chuen Li, MD) [Sherman Auditorium]
16 7:30 - 8:15 Mediastinal Masses (Phillip Boiselle) 8:15 - 9:00 Chest - Case conference (Phillip Boiselle)	17 7:30 - 8:15 Imaging COPD (Alexander Bankier) 8:15 - 9:00 Chest - Case conference (Alexander Bankier) 8:00-9:00 IR Meeting [West Recovery]	18 7:30 - 9:00 Physics (Matt Palmer) [Basic Concepts in Radiography (X-ray 1)]	19 7:30 - 8:15 Trauma - Brain (Rafael Rojas) 8:15 - 9:00 Face, Orbit & Larynx - Trauma (Elisa Flower) 1:30-2:00 East MedRads - Nukes Senior [TCC 484]	20 12:00-1:00 Grand Rounds: Lymph Node Imaging: Back to the Future (Mukesh Harisinghani, MD) [Sherman Auditorium]
23 7:30 - 8:15 MR Techniques (Mark Knox) 8:15 - 9:00 MRI Artifacts (Andrew Bennett)	24 7:30 - 8:15 CT Protocols (Bettina Siewert) 8:15 - 9:00 Ultrasound Imaging of the Scrotum (Robert Kane) 10:30-11:30 NMMI meeting [GZ-103]	25 7:30 - 8:15 Intro to OB Imaging (Deborah Levine) 8:15 - 9:00 CT-guided Procedures (Robert Sheiman)	26 7:30 - 8:15 CTA of the Abdomen & Pelvis (Vassilios Raptopoulos) 8:15 - 9:00 CT Anatomy (Bettina Siewert)	27 12:00-1:00 No Grand Rounds: NERRS
30 7:30 - 8:15 Spine Trauma (David Hackney) 8:15 - 9:00 Spine Trauma Cases (Neuro Fellow)	*Consult the webpage for the most up-to-date schedule: http://home.caregroup.org/departments/radiology/residency/scheduling/conferences/displayMonthNew.asp			

Save the Date: Mentoring meetings August through December 2013

9-Sep	Endnote – Paul Bain from Countway library will update us on current functionality of endnote both as a stand-alone program and on the web – Paul Bain
21-Oct	HMS Faculty Development/Diversity Initiatives and New Policies – a view from the Dean's office – Phillip Boiselle
4-Nov	CV workshop: how to best show the work you have done, and ideas for how to expand your academic profile. – Deborah Levine
9-Dec	What the radiologist needs to know about malpractice , Part II – Ronald Eisenberg

All meetings will be held in Shapiro 484

DEPARTMENTAL Grand Rounds



Friday, September 13, 2013
12 noon - 1:00 PM • Sherman Auditorium

Digitization of Medicine: How Radiology Can Take Advantage of the Digital Revolution

King Chuen Peter Li, MD, MBA - Professor & Chair of Radiology, Wakeforest School of Medicine, Winston-Salem, NC

Dr. Li earned his undergraduate degree in physiology and biochemistry, his medical degree (with honors) and radiology residency training at the University of Toronto, Ontario, Canada before completing a fellowship in MRI at the University of Michigan, Ann Arbor in 1987. In 1989, he earned an MBA from San Jose University, San Jose, CA. Between 2001 and 2006, he served as Chief of the Radiology and Imaging Sciences Program and Associate Director of the Clinical Center at the National Institutes of Health. Currently, he is Professor and Chair of Radiology, Senior Associate Dean for Clinical and Translational Research, Director of the Translational Science Institute, and Director of the Division of Radiologic Sciences at Wakeforest School of Medicine in Winston-Salem. He is also a consulting editor for the International Journal of Biomedical Nanoscience and Nanotechnology, deputy editor for Academic Radiology, and an editorial board member for American Journal of Nanomedicine, Journal of Molecular Imaging, and Journal of Magnetic Resonance Imaging.



Friday, September 20, 2013
12 noon - 1:00 PM • Sherman Auditorium

Lymph Nodes Imaging: Back to the Future

Mukesh Harisinghani, MD - Director of Abdominal MRI, Department of Radiology and Director of the Clinical Discovery Program, Center for Molecular Imaging & Research (CMIR), MGH; Associate Professor, HMS

Dr. Harisinghani received his medical degree from Grant Medical College, Bombay University, Bombay, India and came to Boston to undertake a research fellowship, radiology residency training, and a clinical fellowship in abdominal imaging at Massachusetts General Hospital. Upon completion, he joined the MGH radiology staff and in 2006, was promoted to Associate Professor of Radiology at HMS. Currently, he is the Director of Abdominal MRI and Director of the Clinical Discovery Program in the Center for Molecular Imaging and Research (CMIR) at MGH. In recent years, he is becoming best known for his work with nanoparticle magnetic probes developed at CMIR known as lymphotropic nanoparticle enhanced MRI (LNMRI) that has allowed the detection of minimal metastatic disease in small lymph nodes.

DEPARTMENTAL News (cont'd)

➤ **Interventional Radiology Fellowship Changing of the Guard**



Muneeb Ahmed



Felipe Collares



Barry Sacks

I am pleased to announce that Dr. Muneeb Ahmed has agreed to take on the Directorship of our Vascular & Interventional Radiology Fellowship Program with Dr. Felipe Collares as Associate Director. I also wish to thank IR Chief Barry Sacks who has been holding down the fort and, following a successful recent ACGME visit, is no doubt thrilled to be able to hand the program over in such great condition to Muneeb and Felipe.

➤ **Towards a Warm & Well-dressed Radiology Department**

With the early feel of fall in the air, I am happy to announce that our department fleece jackets (with the BIDMC and HMS logos) will be available once again for everyone interested in purchasing one. Two of our new first year residents, Drew Colucci and Jawad Hussain, kindly agreed to take this task on. Based on feedback, they ordered black long-sleeved Columbia fleece jackets and set up on-line survey instruments that allowed them to guesstimate how many and what size fleeces to order. Enough of us responded such that the final cost is now \$44.19. Thank you Drew and Jawad for their tremendous efforts.



DEPARTMENTAL News (cont'd)

➤ Welcome **Yu-Ching (Jason) Lin, MD**, MSK Research Fellow



Dr. Lin graduated from China Medical University, Taiwan in 2006 and completed radiology residency training at Chang Gung Medical Hospital, also in Taiwan in 2011. Following residency, he stayed on as a staff radiologist specializing in MR Imaging, musculoskeletal MRI and sport medicine before coming to Boston. Dr. Lin is currently a reviewer for Acta Radiologica and Skeletal Radiology. In 2010, Dr. Lin's "Predicting the prognosis and location of uterine adenocarcinoma: Role of diffusion MR imaging at 3T" was awarded Best E-Poster in the 13th Asian Oceanian Congress of Radiology in Taiwan. He is here with his wife and his hobbies include cricket, baseball, and swimming. Of note – but which had nothing to do with getting this fellowship – is that he went to the same high school, Rondebosch Boys' High School in Capetown, South Africa as our own Chair, Jonny Kruskal. Dr. Lin will be working with Dr. Wu on joint diseases.

➤ Newest BIDMC Academy of Medical Educators in Radiology

I was pleased to receive the following letter and I add my congratulations to our new Associate Academy Members:



Omar Awan
MSK Fellow



Matthew Miller
2nd yr Resident



Amanda Rigas
2nd yr Resident



Richard Sharpe
Breast Imaging Fellow

Dear Dr. Kruskal,

We received another enthusiastic response to our annual request for membership in the BIDMC Academy of Medical Educators, and have recently confirmed membership of 55 faculty, fellows, and senior residents. The applicants' teaching experiences and letters of interest were impressive, and we feel fortunate to have so many dedicated and talented teachers and educators here at BIDMC.

We also wanted to inform you of the excellent commitment and participation your department's existing Academy members showed during the AY2012-2013 year. We had robust attendance at all of the Academy events and truly appreciated the members' enthusiasm and determination to promote teaching excellence and innovation across BIDMC.

Senior Academy Members:

Gillian Lieberman
Priscilla Slanetz

Academy Members:

Olga Brook
Ron Eisenberg
Valerie Fein-Zachary
Justin Kung

Associate Academy Members:

Michael Accord - 3rd yr Resident
Monica Agarwal - 4th yr Resident
Seth Berkowitz - 4th yr Resident
Sahil Mehta - 3rd yr Resident
Gunjan Senapati - 4th yr Resident
Samir Shah - 4th yr Resident
Leo Tsai - Body MRI Fellow

Finally, we ask that you send us names of any new and/or junior faculty not currently BIDMC Academy members who you see as having significant roles as educators in your department. We will reach out to them and, with your support, encourage their participation in our professional development seminar series, activities, and offerings.

Thank you for your support!

Sincerely,
David Roberts, MD
Lori Newman, MEd
Co-Directors, Academy of Medical Educators at BIDMC

Here's to an even greater response next year!

– Jonny

RESIDENCY NEWS



Priscilla J. Slanetz, MD, MPH
Dir., Radiology Residency
Program & Dir., Breast MRI

I am delighted to announce that three of our residents have been selected for the following awards (see below), and I am also pleased to welcome 2nd yr residents Matthew Miller and Amanda Rigas as Associate Members of the BIDMC Academy of Medical Educators which brings the total number of Academy members in radiology to 8 residents, 3 fellows and 6 faculty members!



The American Association for Women Radiologists (AAWR) Awards Committee has chosen 4th yr Resident **Elizabeth Asch** to be this year's recipient of the AAWR Lucy Frank Squire Distinguished Resident Award in Diagnostic Radiology. This

award is given in recognition of outstanding contributions to diagnostic radiology at this stage of his/her career. The AAWR is proud to acknowledge members like Liz who can make a difference not only in her specialty, but also to the future of women radiologists. The award will be presented at the AAWR Annual Business Luncheon in December 2013 during the RSNA meeting. We are especially proud as this award has been in existence for less than 15 years and a BIDMC resident has won it twice. 2013 graduating resident Mai-Lan Ho garnered this prestigious award 2011.

This year, the residency program has launched a birthday initiative in order to recognize and celebrate our residents. We first gathered on August 20th to honor residents who have celebrated (or will be celebrating) birthdays during the summer season: Annie Leylek (July 8th), Ton Pinar (July 22nd), Monica Agarwal (July 28th), Matt Del Guzzo (August 28th), Mark Masciocchi (September 10th), Gunjan Senapati (September 14th) and David Glazier (September 19th). **Happy birthday, all!**



Mark Ashkan - 4th yr Resident

Tufts Health Care Institute was selected Mark Ashkan to participate in the 2013 mini-rotation for residents, "Practicing Medicine in the Era of Health Reform." This four-day seminar was held in August Tufts Health Plan, in Watertown, MA. We

look forward to having Mark share what he learned at this very topical conference.



Matthew Miller - 2nd yr Resident

Matthew was recently selected to participate in the RSNA/AUR/ARRS Introduction to Academic Radiology (ITAR) Program in Chicago during the 2013 RSNA Annual Meeting.

The Gallery



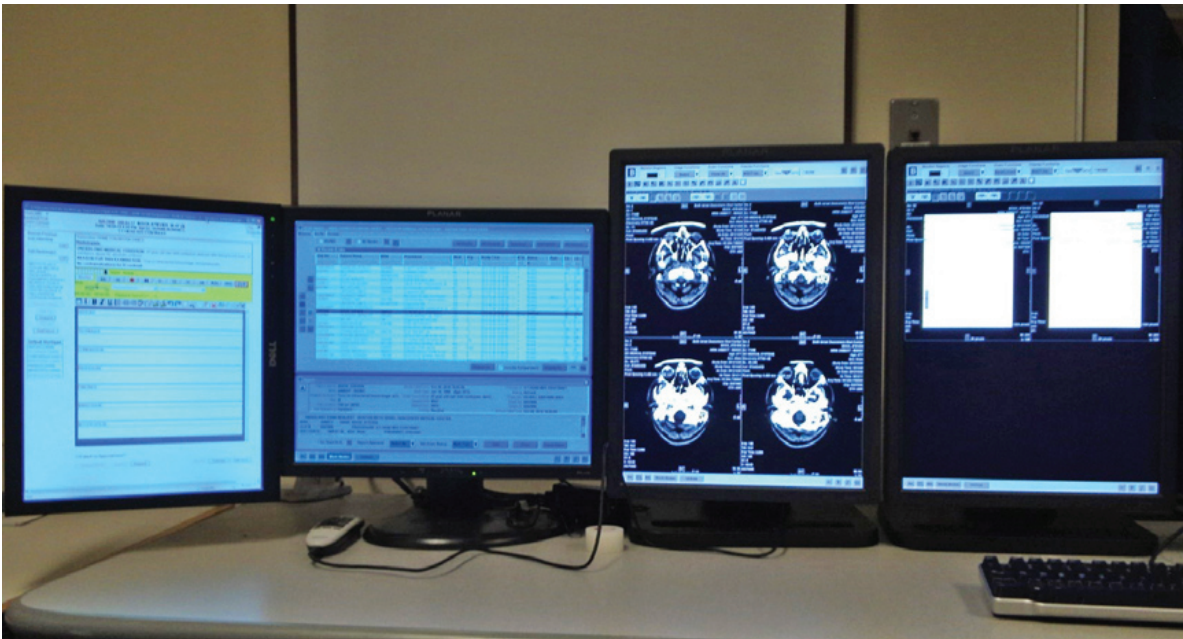
Now showing: *Travel Photos by Maxima Baudissin, check it out at WCC-304A!*

Maxima Baudissin,
Photographer & Traveller

Heeding the Gallery's call for travel photos, IR Admin Asst Maxima Baudissin presents a travel diary in photos of her recent trips to Paris and Munich. We hope this will inspire more staff to share their journeys!

"I never thought of documentary as an art form but experience has proved me wrong. One must still use perspective and a feel for color and pattern to make a composition in any medium. I hope that you will enjoy this chronicle of Paris and Munich. Can you guess which pictures came from where?"

If you would like to show your own photographs, paintings or sculptures in The Gallery (WCC-304A), please contact Donna Wolfe: dwolfe@bidmc.harvard.edu



*Introducing
M*Modal, a new voice
recognition system
coming to a reading
room near you!*

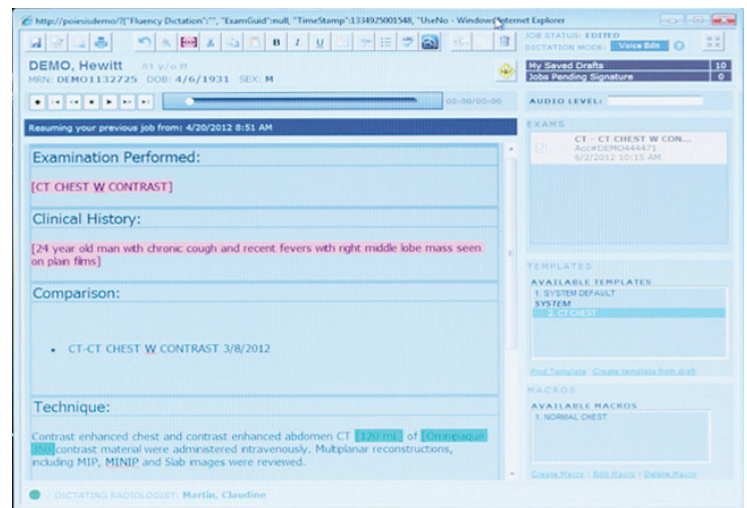
M*Modal Transition

After a thorough analysis by consultants from Systems Evolution, Inc. and the RIS Steering Committee, a decision has been made to use M*Modal's **Fluency For Imaging** for voice recognition and related workflow.

This new product will provide the benefits of a commercial solution, combining powerful speech recognition technology with robust workflow and productivity features. As the industry and product matures, we will be able to take advantage of improvements as they occur and current vendor support will simplify day-to-day issues and help us resolve any problems in a timely manner. Finally, the shift to Fluency For Imaging will allow us to make significant progress in managing and automating key elements of our processes – such as compliance – increase productivity among staff, and enhance patient care.

Implementation of the system will be organized into two tracks. The first will involve training our community of Radiologists to get the most benefit possible from the system. This includes understanding templates and macros, developing standard content for templates and macros to be available when the system is deployed, and leveraging additional tools such as headsets to improve voice recognition quality. This process will involve assigning 'champions' in each section to play a leading role, ensuring that the system is working as needed for their area.

The second track will be the system implementation itself, i.e., acquiring new hardware, installing product software, and building integration among RIS and PACS systems. **The goal of the new system will be to have a very usable and easy to understand workflow that is intuitive to the user community.**



As we all know, transition to voice recognition products always requires an upfront investment from the user community of radiologists, but the downstream benefits of this new system have been shown to be significant and will more than make up for the initial effort. Each track will be managed by a consultant from Systems Evolution, and we have evaluated past efforts to ensure we don't repeat previous mistakes.

Please provide us your feedback as we move forward!

The RIS Steering Committee

John Halamka

Donna Hallett

Larry Markson

Allen Reedy

Jonathan Kruskal

Jesse Wei

Congratulations Matthew Palmer, PhD, DABR - Medical Imaging Physicist

*It gives me great pleasure to announce that Matt Palmer, PhD has been promoted to the position of Medical Imaging Physicist for the Department of Radiology. Many of you know Matt from his work in Nuclear Medicine, on the Radiation Safety Committee, and through physics education programs that he has conducted. **In addition to his Nuclear Medicine qualifications, he recently became certified in medical imaging and has lots of ideas and insights that will be of benefit to our department over the coming years.** Please join me in welcoming Matt into his new role. – Allen Reedy, Radiology Business Director*



Introducing Matt Palmer:

Originally from Canada, Matt earned his undergraduate and master's degrees in electrical engineering at the University of British Columbia where he began work in PET imaging long before it was a clinical modality. He went on to earn his PhD in Radiological Sciences from MIT and in 1998, he came to BIDMC as a research scientist. He then joined Nukes in 2003 coincident with the (soon to be phased-out) PET scanner, *an odd coincidence that he came and went from Nukes, with the first BIDMC PET*

scanner. But the association stops there – PET may be obsolete but Matt is not! In 2007, Matt became ABR certified in Nuclear Medical Physics and this year, he was certified in Diagnostic Medical Physics. In his off hours, he typically runs two marathons a year and has completed the Boston Marathon four times.



As the new Medical Physicist for Radiology, here's what I would like to do with the new job.

1. Harmonize physics efforts across all modalities. Until now, physicists have worked independently in MRI, Nukes and (what physicists call "diagnostic" but consists of) all the other modalities. My first objective is to have them work as a group and with my nukes background I'm poised to take the first step in that direction.
2. Increase the relevance and visibility of physics within Radiology. For example, some of the things we do, particularly related to dosimetry and radiation protection, happens behind the scenes. I'd like to bring them out front, to a place on the Radiology web portal in the form of information materials and calculator-apps.
3. Improve the organization of QC data and equipment evaluations for modality managers and make that information available for use in equipment replacement projects. There are two parts to this – the first is that equipment QC data collection systems are variable across the sections – from pure paper to fairly elaborate web-based tracking and monitoring systems. Some of the technology and ideas can be shared across sections to improve work-flows and enable modernization and I'd like to spearhead that. Second, a large part of the work of the physics group involves performing regular equipment evaluations. This is driven by either regulations or accreditation bodies and, for the most part, our reports end up in a file somewhere in case those regulators or accrediting agencies ask to see them. But these evaluations contain valuable data that I would like to process in such a way that it could inform managers for the purpose of equipment replacement. My ultimate goal would be to present to managers, for each piece of equipment, a synopsis of: 1) how it's performing compared to when it was purchased and 2) how it performs compared to the state of the art.
4. Maintain or improve our working relationships. I'm lucky to have been here for fifteen years and so I've had a chance to work with many faculty members, managers and technologists. My challenge in the coming months is to reach out to the sections that I've had less contact with and start building those connections.

– Matt
Matthew R. Palmer, PhD, DABR
Medical Imaging Physicist,
Department of Radiology
Assistant Professor,
Harvard Medical School



Matt leading a teaching session with 1st yr residents on physics and radiation safety in fluoroscopy

In early August, the Division of MR Research said good-bye to Clinical Research Assistant **Meaghan Fox** who leaves BIDMC to attend medical school! Meaghan has been with MRI research since July, 2010.



After three years as a clinical research assistant in MRI, Meaghan Fox will be leaving to attend medical school in August. Meaghan has had primary responsibility for coordinating the imaging

arm of the SAGES study, an NIH funded study probing brain changes following elective surgery in the elderly and their relationship to in hospital delirium.

Thanks to Meaghan, recruitment has exceeded all expectations and analysis of this rich data set is in progress. She has helped with numerous other clinical research studies in MRI and handled many complex scientific, regulatory, logistical, and budgetary issues. Her skills and her warm cheerful personality will be missed. Friends and co-workers came to her farewell reception to see her off on her promising career.

– Dave Alsop
Vice Chair & Director of Research



Amy Callahan:

Amy is from Syracuse, NY and is very excited to be joining the MRI Research team as a Clinical Research Assistant. She is a recent graduate of St. Lawrence University

in Canton, NY, where she pursued an English major and biology minor. In college, she enjoyed working as a tour guide, singing in a select choir, and mentoring biology students as a teaching assistant. She also studied abroad in Tuscania, Italy during her college tenure. Ultimately, she hopes to pursue a career in medicine. Amy's office is in Ansin Rm. 248 and she can be reached at 7-0325.



Kelly Roth:

Kelly is from South Deerfield, MA and has spent the past year working with the MRI Research team as a Clinical Research Assistant. She is a 2012 graduate of Colby

College in Waterville, ME where she majored in biology with a concentration in neuroscience, and she was also a member of the field hockey and softball teams. She has really enjoyed working on the MRI Research team thus far, and she hopes to continue on to Physician Assistant school to pursue a career in which she can combine her love for sports with her love for medicine. Kelly is in Ansin Rm. 250 and she can be reached at 7-0290

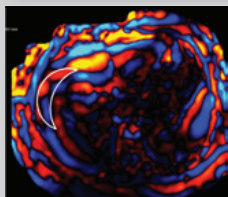
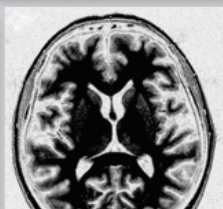
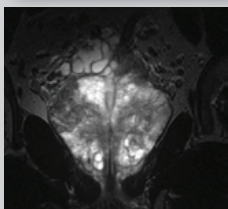
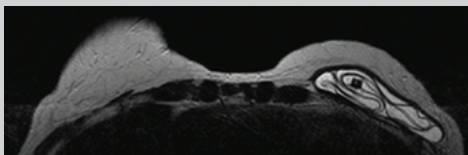


Thanks to Lois Gilden, we can always count on the MRI Clinical Research Assistants being happy to help out at the annual Morrison Research Day event.

In case you missed an issue!

All back issues of Radical Views are available on the portal under "News and Events": <https://apps.bidmc.org/departments/radiology/news/news.asp> and **we also have an outside link on the alumni site:** <http://radnet.bidmc.harvard.edu/education/newsletters.asp>

BIDMC Radiology is proud to present
Best in Practice MRI Lecture Series 2013



Fall Symposium

Saturday Sept 21st (9:00 am - 12:30 pm)
Sherman Conference Room, BIDMC

Prostate MRI - Maryellen Sun, MD

Breast MRI: Technical Advancements & New BIRads - Priscilla J. Slanetz, MD

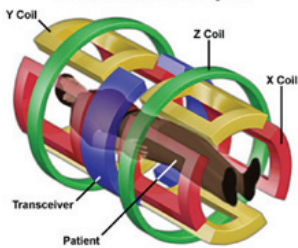
MRA: Contrast & Non-Contrast Techniques - Jesse Wei, MD



These lecture are pending accreditation by the American Society of Radiologic Technologists (ASRT) Accreditation: 1 Category A Credit

Organizing Committee: Jeremy Stormann B.S. RT (R), (MR); Ines Cabral-Goncalves, RT (R), MR; David Alsop, PhD and Koenraad J. Morteale, MD

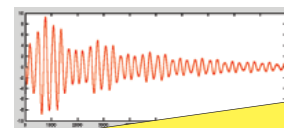
For more information, contact Lois Gilden
Tel: 617-667-0299, Email: lgilden@bidmc.harvard.edu



National High Magnetic Field Laboratory

BIDMC

Radiology Residents & Fellows MRI Physics Course

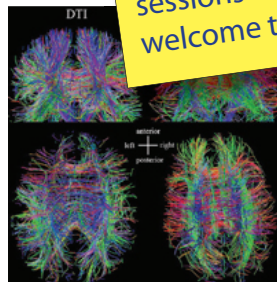


2013-2014 Academic Year

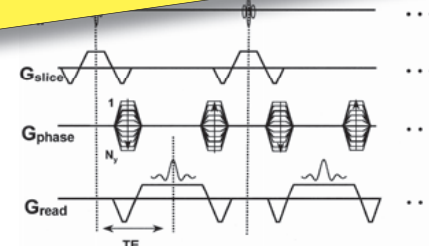
Even if you missed the standing room only sessions held in July and August, you are still welcome to attend sessions 6-19!

Purpose:

- To provide residents and fellows with a basic understanding of MR physics, with emphasis on practical aspects of image acquisition such as protocol optimization and troubleshooting.
- A brief overview of fundamentals of nuclear magnetic resonance will provide an introduction to sources of image contrast in MRI.
- Techniques for image formation will be described, followed by an overview of the major families of MR pulse sequences.
- Topics including angiography, diffusion weighting, parallel imaging and spectroscopy will be briefly addressed.
- The final section of the course will describe current areas of research.



Hagmann et al. Radiographics 2006



O Simonetti et al. Radiology 2001

Format: A total of 19 sessions including 16 lectures and 3 hands-on sessions at the Bruker 9.4T and/or GE 3T scanners. **All sessions are held on Wednesdays, 5-6 pm at the MRI Learning Lab, Ansin 220, East Campus.**

The course will follow "MRI in Practice," 4th Edition (2011) by Catherine Westbrook. Supplementary reading from review articles will be recommended for advanced topics.

TOPICS

Lectures 6-13: Fundamentals of MR imaging

September 4, 2013: Pulse sequences. Gradient echo, spin echo, steady state, EPI. STIR/FLAIR/IR etc. Fat suppression.

September 11, 2013: Hands On Session 1: Basics of running a scanner. Common problems in preparing a patient for imaging. Overview of coil arrays and pulse sequences.

September 18, 2013: Spins in motion: flow and diffusion. Flow compensation, time of flight, phase contrast. Introduction to basic diffusion weighted imaging.

September 25, 2013: Contrast-enhanced MRI. Relaxivity and image contrast as a function of dose, TR, TE. Dynamic contrast enhanced imaging.

October 2, 2013: Artifacts and troubleshooting.

October 9, 2013: Accelerated imaging. Parallel imaging and compressed sensing.

October 16, 2013: Spectroscopy with applications to neuro, breast and prostate.

October 23, 2013: Hands-on session 2. Protocol optimization with basic pulse sequences.

Lectures 14-19: Practical applications, advanced topics & current research at BIDMC

October 30, 2013: MR Angiography

November 6, 2013: Cardiac MRI

November 13, 2013: Topics in multinuclear imaging: Hyperpolarized ¹³C and metabolic imaging; ³¹P and ²³Na.

November 20, 2013: Diffusion-weighted imaging and DTI in neuro applications.

December 4, 2013: Arterial spin labeling in the brain and body. fMRI.

December 11, 2013: Hands on session 3. Introduction to research pulse sequences.

For more information, contact Aaron Grant, PhD 7-3265

KOMMUNITY KORNER: Introducing Peter Gordon: A 1-yr Anniversary Report

For the Kommunity Korner this month, I was able to catch up with Dr. Peter Gordon, Vice Chair of our Community Network Services. Although we wanted to introduce him as soon as he came on-board, we also wanted to give him a chance to get his feet wet before interviewing him. As his one-year anniversary approaches, this seems like a good time for a progress report!



Jeffrey Bernard, RT
Manager, Community
Radiology Network Services



Dr. Gordon and Jeff during a weekly community meeting. Note Dr. Gordon's travel photos on the wall.

Introducing Peter Gordon:

Originally from Long Island, Dr. Gordon made his way to Boston for medical school at Tufts University and then completed a medicine internship at George Washington University before returning to Boston for radiology residency and fellowship training at MGH and what would become Brigham and Women's Hospital. Almost unheard of in this day and age, Dr. Gordon has had only one "job" prior to joining BIDMC. He started off as a staff radiologist at Cardinal Cushing Hospital and worked with Keith Rabinov (a previous BI Radiology attending). In 1994, Cardinal Cushing Hospital merged with Goddard Hospital to become Good Samaritan Hospital, at which time, Dr. Gordon became radiology chief. In 2003, he also assumed radiology leadership at Saint Anne's Hospital in Fall River, MA. Professional leadership roles include President, Massachusetts Radiological Society and Fellow, American College of Radiology; and President of both Good Samaritan and Cardinal Cushing Medical Staffs. When not working, he shares his life with his wife, Jackie and their two children. Dr. Gordon's interests include travel - near and far, photography and hiking (Donna Wolfe is now "jonesing" for him to present a show of his photos in our radiology art gallery, WCC-304A).

The first question I posed to him was, **"So what have you learned your first twelve months here?"**

Without hesitating he replied, "The academic community practice is hybrid and complex, with potential to bring to the community specialized radiological care. As an added bonus, I am working with a group of wonderful, very talented people".

When asked about our strengths, Dr. Gordon was quick to point out our high caliber of specialized care we provide – radiologists, technologists, nurses and support staff alike.

"With this strength, we have the ability to take this clinical expertise and commitment to the community setting."

Given Dr. Gordon's diverse talent and experience, I asked what he thinks he can bring to the mix? Humbly he offered the following:

Customer Satisfaction – It is important to keep in mind the end user, our patients and referrers. To ensure we satisfy their needs and expectations for better patient-centered care."

Efficient Methods – To develop efficient methods for radiologists and staff to care for patients and re-design workflow for a streamlined interpretative process.

Leverage Technology – To attain the goals of the department and future applications, in new settings, to take us to the next level. "It is important to provide the right technology and state-of-the-art equipment to remain competitive for the benefit of our patients".

Extensive Experience – An additional talent Dr. Gordon brings to the table is his 18+ years experience as Chief of Radiology in a community-based hospital setting. He understands the complexity of hospital administration and brings us valuable experience in managing multi-location practices. "The need to provide expert radiological care and meet the needs and expectations of multiple hospital administrations is key".

The concern of many is the advent of Accountable Care Organizations (ACOs) and how they will effect hospital operations and patient care. According to Dr. Gordon, "ACOs will cause amalgamation of entities and further integration of services. The prospective payment method demands insight and incisive radiology. Whereas, the fee-for-service method – the more radiology studies performed, the happier everyone is. Now with LEAN methods, a more efficient use of our resources will be critical to our success. The Chestnut Hill Square project is an example of how the radiology department can work with other departments and hospital administration to create an exciting venue for patients and providers in a more cost effective and efficient setting".

Thankfully, when the "out-of-the-blue opportunity" to work at BIDMC presented itself, Dr. Gordon was ready for a change and new challenge. A change and new challenge he got! His strong commitment to the hospital and community practices is readily apparent wherever he goes. A belated, **"Welcome Aboard, Dr. Gordon"!!**

More Community News



Outreach in Dedham

Linda Paul, NP for Mass Vein Care gave a community talk on Thursday, August 15 at Dedham Health Club to the Diabetes Support Group. We were invited to participate in their workshop with the registered dietician Beth Quiqley. Beth and Linda held an open style talk show forum for two hours discussing the parallel between venous insufficiency, diabetes, and exercise limitation.

Breast Cancer Screening Outreach - World Health Organization

Dr. Rola Shaheen who is on sabbatical and currently Acting Chair of Radiology & Chief of Women's Imaging at Mafraq Hospital, United Arab Emirates is wonderful to keep us abreast of her work in the Middle East:

I am thrilled to share with you the good news that the World Health Organization has assigned me as a consultant in the breast cancer screening program (for the East Mediterranean region) to develop a desk review of the breast cancer screening program in EMR countries, current practices and lessons learned. Additionally I will be assisting WHO in developing a WHO position paper on breast cancer screening program in EMR. I look forward to the possibility of being able to collaborate with [BIDMC Breast Imaging] Drs. Tejas Mehta and Ferris Hall on this.

Miss you all.
Thanks,
Rola



Announcing the newest addition to the BIDMC Radiology Community: *Sophie Berkowitz*



**No babies were irradiated during the editing of this photo.*

Dear Friends, Colleagues, and Co-workers,

We would like to announce the arrival of Sophie Elizabeth Berkowitz (7 lb 13 oz, Tuesday, July 30th 10:51am). She's been studying pelvic anatomy for 9 months and offered to assist Muneeb on this pelvic angiogram.*

- Seth, Dina, and Daniel

Seth Berkowitz, 4th yr Radiology Resident

KUDOS - Each month, we share the positive feedback we receive about staff members and ask you to join us in congratulating them but this month, we are especially proud to acknowledge an unprecedented constellation of staff for providing outstanding care and service!

ULTRASOUND

- **Peggy Newman, Tracy Cataldo, Elizabeth Rosenberg** and **Marianne Sullivan** provided extra support for Ultrasound by working extra shifts during LOAs.
- **Blaithin O'Hanlon** for coordinating the on call schedule.
- **Nora Sullivan Call** - Participation in MOB - CH work group. Consistently offering ideas for increasing MSK Ultrasound. Maintaining up to date information on MSK brochure, keeping these brochures stocked in referring departments.

DIAGNOSTIC

- **Shakinah Jenkins** regularly goes above and beyond, providing excellence in patient care and customer service. She knows what needs to be done (and then some) without being told.

NUC MED

- **Jeff English** covered the ACR survey during the manager's absence.
- **Andrew Fleming** for volunteering to update the Procedure Manual on the web and for completing the task competently and efficiently.

BREAST IMAGING

- **Elena Morozov, Judy Adams, Connie Mulcahy, Vicki Chase, Cindy Smith, Dorothy Sands, Rose Stanley, Janet Vaidya,** and **Elizabeth Cretel** for their continued dedication to our patients, excellent customer service, and caring and attentiveness to patient needs.

MRI

- **Jason Mangosing, Maryann Buttacavolli,** and **Kristina Pelkola** for all the support, dedication and hard work needed to sustain the BIG IDEA system. They have been part of the Idea committee since it began almost three years ago and we are proud of their commitment.



Beth Israel Deaconess
Medical Center

Welcome Visitors

Thank you for partnering with us in our mission to support a healing environment.

- W** **Welcome to the Department of Radiology** at Beth Israel Deaconess Medical Center. Our entire staff is committed to providing the highest medical care to our patients.
- E** **Every effort** will be made keep you informed of the patient's status. If you do not plan to wait within the designated waiting area, please leave your phone number with the receptionist so that we can reach you.
- L** **Loved ones** provide valuable comfort for our patients. Our goal is to make sure each patient has both the healing presence of wanted visitors and the best medical care available. We strive to achieve just the right balance for each patient. Thank you for respecting our staff's advice about how and when to visit.
- C** **Comfort, safety and privacy** of every patient is of primary importance to our staff. Please remember to clean your hands before and after visiting, and keep noise to a respectful minimum. Sometimes visitors are asked to return temporarily to the waiting area due to clinical or privacy reasons. When this happens, we will do our best to let you know when a visitor may return to the patient's side.
- O** **On-going attention** to quality is vital to help us create a patient-focused, supportive environment. We welcome your constructive feedback in our journey to improve. Please visit our kiosks located in the department to offer suggestions and let us know how we are doing.
- M** **Maintaining respect** for our patients in a supportive, compassionate manner is essential as we strive to provide timely and safe care. There may be times when you feel you are waiting too long, or you may have other concerns. Please feel free to express your concerns to any of our staff so that your questions can be answered and your issues addressed.
- E** **Each patient care setting** at BIDMC has unique needs. Staff may sometimes place certain restrictions on visitors, due to clinical or other considerations, and there may be times when visits are interrupted for privacy, safety or clinical reasons. Please ask our staff for additional information, or ask to see our visiting policy.

No doubt you have all seen the hospital-sponsored Welcome Visitors posters displayed in our numerous reception areas which we have personalized by location. Our Kudos is just one way that we show our commitment to providing the highest medical care to our patients.

- **Lisa Thornhill** was recognized by a patient as being kind, professional, smart & an excellent caregiver during a recent MRI exam.
- **Karen Platcow, Emily Defalco,** and **Sarah Porter** have submitted the most ideas to the BIG IDEA system since it was implemented. They have looked for ways that we can improve our department, increase staff morale, safety for patients and saving cost.

PUBLICATION CALL OUT:

Image Guided Core Needle Biopsy of Musculoskeletal Lesions: Are Nondiagnostic Results Clinically Useful?

Manjiri M. Didolkar MD, MS, Megan E. Anderson MD, Mary G. Hochman MD, MBA, Julia G. Rissmiller MD, Jeffrey D. Goldsmith MD, Mark G. Gebhardt MD, Jim S. Wu MD

Image Guided Core Needle Biopsy of Musculoskeletal Lesions: Are Nondiagnostic Results Clinically Useful?

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Abstract

Background

The clinical utility of nondiagnostic core needle biopsies is not fully understood. Understanding the clinical and radiologic factors associated with nondiagnostic core needle biopsies may help determine the utility of these nondiagnostic biopsies and guide clinical decision making.

Questions/purposes

We asked

- (1) whether benign or malignant bone and soft tissue lesions have a higher rate of nondiagnostic core needle biopsy results, and which diagnoses have the lowest diagnostic yield
- (2) how often nondiagnostic results affected clinical decision-making
- (3) what clinical factors are associated with nondiagnostic but useful core needle biopsies.

Methods

A retrospective study was performed of 778 consecutive image-guided core needle biopsies of bone and soft tissue lesions referred to the musculoskeletal radiology department at a single institution. The reference standard was (1) the final diagnosis at surgery or (2) clinical followup. Diagnostic yield was calculated for the most common diagnoses. Clinical and imaging features related to each nondiagnostic core needle biopsy were assessed for their association with clinical usefulness. Useful nondiagnostic biopsies were defined as those that help guide treatment.

Each lesion was assessed before biopsy by the orthopaedic oncologist as (1) "likely to be benign" or (2) "suspicious for malignancy." The overall diagnostic yield was 74%.

Results

Malignant lesions had higher diagnostic yield than benign lesions: 94% (323 of 345) versus 58% (252 of 433), yielding a relative risk (RR) of 1.61 and 95% CI of 1.48 to 1.75. Soft tissue lesions had a higher diagnostic yield than bone lesions: 82% (291 of 355) versus 67% (284 of 423); RR, 1.22; 95% CI, 1.22 (1.12–1.33). Ganglion cyst (36%, four of 11), myositis ossificans (40%, two of five), Langerhans cell histiocytosis (0%, 0 of four), and simple bone cyst 0%, 0 of six) had the lowest diagnostic yield. Of the nondiagnostic biopsies assessed for clinical usefulness by the orthopaedic oncologist, 60% (85 of 142) of the biopsies were useful in guiding clinical decision making. Useful nondiagnostic core needle biopsy results occurred more often in painless, nonaggressive lesions, assessed as "likely to be benign" before biopsy.

Conclusions

Nondiagnostic core needle biopsy results in musculoskeletal lesions are not entirely useless. At times, they can be supportive of benign processes and can help avert unnecessary surgical procedures.

Level of Evidence Level II, diagnostic study. See Guidelines for Authors for a complete description of levels of evidence.

Publication Call Out: BIDMC Mouse Hospital - Who Knew?

The recent New York Times article below highlighted a new concept in cancer research being pioneered at BIDMC – that of “co-clinical trials” and the associated “Mouse Hospital”. In these studies, mice and human trials of a given intervention parallel each other, and inform each other, thus improving the efficiency of both for testing new interventions. The animals at the Mouse Hospital can benefit from serial MRI studies which parallel the MRI used in clinical trials, through the Preclinical MRI Core at BIDMC. This Core has three MRI systems for animal studies and are available on a fee-for-service basis to any investigator within BIDMC and surrounding communities.

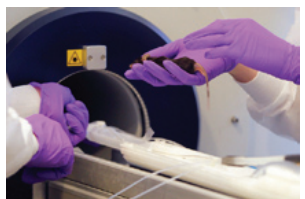
There are a number of significant advantages to using preclinical MRI. As in clinical trials, preclinical MRI can be used to define the stage of disease in animal cohorts, and thus allow for matched cohorts into different arms of a trial (something which more destructive standard preclinical techniques such as histology do not allow for). Similarly, preclinical MRI allows for tracking of responses during the trial, and thus for each animal to serve as its own ‘control’, which provides for stronger conclusions than independent timepoints from different cohorts. Finally, the preclinical MRI results can be directly compared with clinical MRI results utilizing the same MRI protocols. Further information, the MRI Preclinical Core can be found at <http://www.bidmc.org/Research/Departments/Radiology/Laboratories/Preclinical-MRI-Core-Facility.aspx>

- Deborah Burstein Mattingly, PhD
Director, Center for Basic MR Research, BIDMC

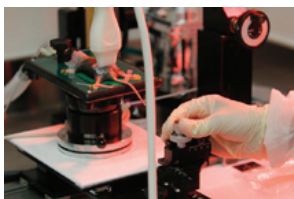
Photos by Jessica Rinaldi for The New York Times



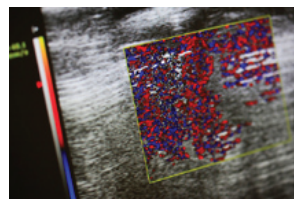
At BIDMC in Boston, John Clohessy viewed the ultrasound image of a mouse.



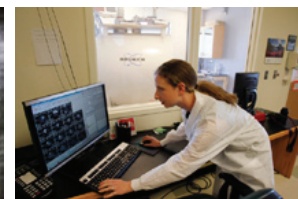
Scientists at the “mouse hospital” use specialized methods to study cancer in mice.



Researchers use ultrasound to check an anesthetized mouse's prostate.



Blue and red dots illustrate the blood flow as seen on the ultrasound.



Michelle Farley, a research engineer, examined M.R.I. images from a mouse with prostate cancer.

Tiny Patients, Major Goals

By GINA KOLATA

Published: June 10, 2013

BOSTON — Here at Beth Israel Deaconess Medical Center, a black mouse lies on a miniature exam table, his tail dangling off the end. A plastic tube carries anesthetic to his nose and mouth. He is asleep.

Before he was born, the mouse was injected with two mutated genes often found in human prostate cancer. As he lies on the table, a technician is measuring his two-millimeter prostate tumor with a petite ultrasound machine — the very exam a man would undergo, only on a dollhouse scale.

“There’s the tumor,” says the technician, Bhavik Padmani, sliding a probe over the mouse as a bright white amoebalike shape comes into view.

The animal is in what is called a “mouse hospital,” a new way of using mice to study cancer. Although mice have been studied in regular labs for years, the results often have been disappointing. Usually, the cancers were implanted under their skin, not in the organs where they originated. And drugs that seemed to work in mice often proved useless in humans. The mouse hospital at Beth Israel Deaconess and a few similar ones elsewhere are at the forefront of a new approach to studying human cancers. The mice are given genes that make them develop tumors in the same organs as humans, which means the researchers need scanners to watch the tumors’ growth inside the animals’ bodies. So the mouse hospitals have tiny ultrasound machines, CT and PET scanners, and magnetic resonance imaging machines with

The New York Times

Check out the on-line version complete with a video:

http://www.nytimes.com/2013/06/11/health/in-a-hospital-for-mice-hope-for-men.html?pagewanted=all&_r=0

little stretchers to slide the mice into the machines. They also have mouse pharmacies to formulate medicines in mouse-size doses and mouse clinical laboratories specially designed to do analyses on minute drops of mouse blood and vanishingly small quantities of mouse urine. That lets them follow cancers’ growth and responses to treatments.

What’s more, with genetic advances in studies of human tumors, the researchers do not have to implant human cancer cells in all their complexity into mice to study the cancers; instead, they can give the mice just a few mutated genes that seem to drive a tumor.

They genetically alter the mice before they are born and then, with scanners, watch what happens as a cancer develops in the expected organ — the prostate, in this case. Then they can try out drugs designed to attack those gene mutations and the cancers they cause. The result, so far, has been astonishing. The mice with just a few cancer genes developed prostate cancer when they grew up. The cancer responded to the standard treatment — castration or, in the case of patients, chemical castration with a drug that shuts off testosterone production in the testes. Then, as often happens in men with advanced prostate cancer, the tumors in the mice started growing again, resistant to the castration treatment.

But because so few genes were involved in the mouse prostate cancer, the investigators, including Andrea Lunardi of Beth

Israel Deaconess, could pinpoint the genetic roots of the treatment resistance. Researchers had studied prostate tumors before, asking how and why they grew resistant to treatment, but were stymied by the hundreds of mutations in cancer cells and unable to figure out which ones were important to the treatment resistance.

In retrospect, the solution seems obvious, said Dr. Pier Paolo Pandolfi, scientific director at Beth Israel Deaconess Medical Center. By making mice with only one or a few suspect mutations at a time, scientists cut through the chaotic genetic noise.

"The data were in front of our eyes, but we did not see them because the patients had many other things going on," Dr. Pandolfi said.

Understanding the roots of the treatment resistance in mice, the investigators could try out rational ways to circumvent it in the animals, based on their genetic insights. It turned out to require more than one drug, which was not surprising.

The work is reported in *Nature Genetics*.

Many cancer researchers have suggested that the best way to treat cancer will be with more than one drug, blocking the cancer's paths of escape. But the trouble was choosing which drug combinations to try.

"If we start randomly throwing every combination together, there are not enough patients on earth to test them," said Dr. Lewis C. Cantley, director of the cancer center at Weill Cornell Medical College and NewYork-Presbyterian Hospital who worked with Dr. Pandolfi on the prostate cancer study. "We need a scientific rationale for picking a particular combination of drugs."

The investigators just started one clinical trial to see if the mouse studies predict what will happen in patients, and are about to start another. And, they say, they could never have gotten this far without the mice with human cancer genes and the mouse hospital to study them.

"It's a very clever, innovative way to try to improve patient care," said Dr. Scott Eggener, a director of the prostate cancer program at the University of Chicago, who was not involved with the research. "Now it is incumbent on them to show it works in humans."

That, of course, is the goal of the two clinical trials. Each participant will be matched with collections of mouse proxies, with each group of mice engineered to carry different combinations of a few major human prostate cancer genes. The mice will develop tumors, just as the men did, and will receive the same treatments as the men. But since each mouse will have only one or a few of the critical cancer mutations, researchers will be able to see if a treatment is doing what it should and analyze the reason for resistance, if it develops. These trials will be the first to test treatments in mice and men simultaneously, Dr. Pandolfi said.

The patients will be men whose advanced cancer grew resistant to the standard treatment with chemical castration. To escape the drug, the cancers turn on genes that let them make their own testosterone. Some even make a more powerful version of the hormone, dihydrotestosterone.

"Surprisingly, over time, the prostate cancer cells become almost like mini-endocrine organs," said Dr. Glenn J. Bubley, director of genitourinary medical oncology at Beth Israel Deaconess.

Cancer cells also have a way to survive even if their hormone supply is cut off. They inactivate genes that normally would make them commit suicide when deprived of the testosterone or its stronger cousin.

In the study that has just gotten started, men with advanced prostate cancer will get Zytiga, made by Janssen Biotech, which stops the tumors from making testosterone, along with an experimental drug made by Novartis that prevents the cancer cells from inactivating their suicide program — at least in the mice with the human prostate cancer genes.

The other study, beginning soon, will use a combination of drugs — Avodart, made by GlaxoSmithKline, to block dihydrotestosterone production, and another drug, embelin, a natural compound, to prevent cells from inactivating suicide genes.

Don De Grandis is patient No. 1 in the first study. He found out in October that he has prostate cancer when what he thought was a muscle pull in his back turned out to be bone pain from a cancer that had already spread to his bone marrow.

Mr. De Grandis, 58, a former warehouse worker from North Easton, Mass., was soon in excruciating pain, even with heavy doses of narcotics. The cancer was too advanced to cure, and the standard testosterone-blocking drug had stopped working.

He joined the study in March. Just a couple of weeks later, his wife, Kathleen, knew something was happening.

"He made me dinner," she said. "It was very good — pasta with mushrooms, ground turkey and cheese. With a beautiful salad." Until then, she said, he had been in too much pain and too tired to move much from his bed.

His physician, Dr. Bubley, noticed that Mr. De Grandis's PSA levels, a measure of prostate cancer growth, had begun to fall.

Mr. De Grandis started using a cane instead of a walker and cut his narcotic dose in half. But, Dr. Bubley cautioned, this is an early-stage clinical trial, looking primarily for drug dosages and safety. There are many unknowns and no guarantees.

So far, some of the mouse proxies getting the same drugs as Mr. De Grandis are responding too, Dr. Bubley and the other researchers say. The cancer — and its response to treatment — progresses much faster in mice, so the animals may give a foretaste of what is to come in the men to whom they are matched.

Now the researchers will follow Mr. De Grandis and the mice that are responding to see how long the good effect lasts, and they will do a similar analysis of other men who are joining the study to see how well the mice mirror the men and whether the drug combination works for others as well.

Meanwhile, Mr. De Grandis said he was hoping for one more good year of life.

"I just want to spend more time with my family," he said.

2013 BIDMC Radiology Publications [New Citations in Blue*]. We do a monthly PubMed search for new BIDMC publications and may miss those in which your affiliation is not noted. If we miss your paper, please send the reference to dwolfe@bidmc.harvard.edu.

Note that publications do not always appear in Pubmed in the same month they are actually published and publications listing an Epub date may be updated in the new year, thus their paper publication will appear in 2013.

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