**Exploring the brain with Opening Lecturer Denis Le Bihan**

By Simon Lee

Participants at ECR 2011 yesterday saw Dr. Denis Le Bihan from Gif-sur-Yvette, France, get the congress programme officially up and running with the Opening Lecture, Water: radiologists’ best friend? ECR Today took the opportunity to ask him a few questions about his lecture, his recent work at the NeuroSpin institute in France, as well as the current status of his famous invention, diffusion MRI.

ECR Today: You gave the Opening Lecture at ECR 2011, entitled ‘Water: radiologists’ best friend?’ What was the central message of your lecture?

Denis Le Bihan: H2O, especially in its liquid form, the blue gold, is just indispensable to our lives. Water accounts for 60 to 70% of the human body weight and is crucial to the working of the biological machinery. The implication of water in molecular biology, basic cellular mechanisms, as those defining the cells’ shape or volume, or regulating interaction between cells, cannot be ignored. Radiologists know it well, as water is a source of image contrast, whether we use x-rays, ultrasound or MRI. A lot of work remains to understand the mechanisms in detail, although recent studies of water mobility in biological structures have highlighted its importance to cellular physiology. Recent studies have suggested that water (9 out of 10 molecules in the brain are water molecules) may also actively contribute to the mechanisms underlying brain function. Could the ‘molecule of life’ also be the ‘molecule of the mind’?

ECR: What is the primary objective of NeuroSpin?

DLB: The understanding of how the human brain works has considerable potential, not only for healthcare, but also for improving human cognition in general. The goal of Neurospin is to explore the brain at spatial and temporal scales which may give access to the neural code, by pushing the current limits of brain imaging, from mouse to man, as far as possible with ultra-high magnetic field (UHF) Magnetic Resonance Imaging and Spectroscopy. Results are expected to impact not only European healthcare, but also industry, artificial intelligence, social sciences and the humanities. Neurospin is being continued on page 3

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**Reimbursement holds key to CT colonography’s future growth**

By Philip Ward

One of Europe’s leading exponents of CT colonography (CTC) has called for much greater harmonisation and drastically improved funding for the reimbursement of this emerging procedure.

“Reimbursement is a key factor for the development not only of CTC but also of any imaging method,” said Prof. Laura Laghi, from the department of radiological sciences (Polo Pontino), University ‘La Sapienza’, Latina, Italy.

“Considering the current economic situation, getting reimbursement for a new technique is much more difficult than in the past, especially if there are strongly competing alternatives.”

Major differences in reimbursement currently exist across Europe, and even within individual countries, as in the case of Italy and Austria. The overall situation is poor, and strong efforts need to be made in the near future to try to solve the difficulties, he explained. In general, CTC is not reimbursed for screening in any European country, with the recent exception of Spain, where a private insurer decided to cover colorectal cancer screening in the patient at average risk for colorectal cancer.

In recent multicentre trials, CTC showed very good results of polyp detection, and its accuracy for polypoid and tumoural lesions in the colon.

“In recent multicentre trials, CTC showed very good results of polyp detection, and its accuracy for polypoid and tumoural lesions in the colon. As an examination designed for polyp and tumour detection in the colon, CTC has now reached a sufficient level of competency, making the double contrast barium enema an obsolete examination in 2011, according to fellow ECR presenter Dr. Philippe Lefere, a radiologist at Stedelijk Ziekenhuis in Roeselare, Belgium. As the implementation of CTC moves ahead, general radiologists must become aware that this technique can play a significant role by scrutinising both symptomatic and asymptomatic patients for polyloid and tumoural lesions in the colon.”

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Continued on page 8
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Answers for life.
Renowned thoracic imaging specialist focuses on the value of basics in today’s honorary lecture

By Simon Lee

Le Bihan Interview

continued from page 1

In recognition of his remarkable career and exceptional contributions to education in radiology Professor José Cáceres from Barcelona, Spain, has been invited to present the Josef Lissner Honorary Lecture, entitled ‘The chest radiograph: a perfect design’ at ECR 2011.

José Cáceres is Professor Emeritus of Diagnostic Radiology at H.G.U. Vall d’Hebron Universidade Autonoma, Barcelona, where he has served since 1996. He is well recognised as an excellent chest radiologist and foremost as an outstanding educator in the field.

“The central message of my lecture, ‘the chest radiograph: a perfect design’, is that the chest radiograph is still a valid technique and very useful in the diagnosis and orientation of diseases,” said Cáceres.

Prof. José Cáceres was born in Sevilla, Spain on February 9, 1940, and attended medical school at the University of Seville from 1957 to 1964. After his graduation in 1965, he moved to the USA, where he passed his internship at the Cook County Hospital in Chicago and completed a residency at the University of Cincinnati from 1966 to 1969, followed by a one-year fellowship in diagnostic radiology at the same institution.

“When I started out in radiology I had the vision that it would become a very important method for diagnosis, and it turned out that I was right,” explained Cáceres. “I was also very fortunate to be trained by Dr. Benjamin Felson, one of the best radiologists of all time. His memory motivates me every day.”

After an appointment as Assistant Professor of Radiology at the University of Kentucky from 1970 to 1971 he returned to Spain and held several positions as Head of Department and Professor in Madrid, Valladolid and Barcelona. In 1996, he accepted the post of Professor and Head of Diagnostic Radiology at the H.G.U. Vall d’Hebron Autonomous University of Barcelona; a position he held until his retirement in September 2010.

Prof. Cáceres has published throughout his career, including one book, 20 chapters and 91 scientific articles in some of the most respected radiological journals, and also served as the chest imaging section editor for European Journal of Radiology. He is a member of many scientific societies, including the Spanish Society of Radiology, the Radiological Society of North America, the American Roentgen Ray Society, and the American Society of Chest Imaging, and has served as President of the European Society of Thoracic Imaging, and the Spanish Society of Thoracic Imaging, and has chaired the chest sub-committee of the European Congress of Radiology three times.

He is married with three children, and enjoys running, reading, and movies.

ECRT: What does the ECR mean to you personally and professionally?

DLB: I have come to the ECR many times over the last 20 years. I have seen it growing at an amazing speed to reach a level of quality which makes it now an inescapable reference for our fellow radiologists from the world. Many non-European colleagues, in particular from Asia, have told me how much they love this congress which has managed to keep its strong European flavour, while being open to the world, especially to our young fellows and students who find there a very rich and nurturing teaching environment. Clearly, by coming to the ECR, I am sure I will meet my best friends and enjoy great lectures.

ECRT: Your homepage lists Mozart and Schubert among your favourite composers. Will you be making the most of Viennas cultural background during ECR 2011?

DLB: It is true that Vienna is a musician’s paradise! As a pianist I feel very much inspired when walking in the streets of Vienna, as if the minds of those outstanding composers were still wandering. I am not sure that the busy (but great) programme ahead of us at the ECR meeting will leave me much time, but I cannot definitely leave Vienna without attending a concert or an opera performance.

Professional, I believe ECR holds its own against any other congress in the world. I believe there is more talent in Europe than in USA or Asia. Personally, I feel surrounded by friends.

José Cáceres from Barcelona, Spain

Josef Lissner Honorary Lecture

Friday, March 4, 2011, 12:15-12:45, Room A

‘The chest radiograph: a perfect design’

José Cáceres; Barcelona/ES
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CT colonography

continued from page 1

Isolation is necessary, the examination time is short, it can be performed the same day as the optical colonoscopy, it can detect important pathology outside of the colon, and patient preparation is possible without interruption of normal daily activities, Lefere said. The main drawbacks are that radiation is used, polypectomy is not possible, there is the potential for superficial lesions (stereotactic), patient preparation is still needed, and it involves a relatively steep learning curve and long interpretation times during the initial phase.

"Technical advances with the introduction of the latest multislice scanners, and improvements in x-ray tubes with the use of tube current modulation and beam-shaping filters, have decreased radiation doses," he stated. "Further improvements of CT scanners together with iterative reconstruction techniques will allow more decreases in the radiation dose in general. This will bring radiation exposure and faster and more accurate reading, possibly with the help of computer-aided diagnosis software. But we should also pursue other goals, including the development of a programme of QA and strong governance, plus audit and training."

Along with his colleague Dr. Stefan Grysspeerdt, Lefere has addressed CTC's potential pitfalls in a comprehensive paper published online on 4 January 2011 by Insights into Imaging. "Their top tips are to perform state-of-the-art CTC (preparation based on faecal tagging, along with colonic distension with CO2 plus injector, dual positioning and smooth muscle relaxation), to remember the general principles of interpretation, and to take special care when examining the rectum and caecum.

It is important to make CTC a really efficient tool for polyp detection performed reliably by a large community of radiologists, and to confirm the good results obtained in trials, structured education with ongoing quality assurance (QA) will need to be implemented, Lefere stated. Recommendations for CTC education need to be further elaborated, and a lot of work is being done in this area by ESGAR's CTC committee. Developing good collaboration with gastroenterologists is another vital task because this will enable QA through the establishment of patient guidelines and follow-up of patients with a lesion detected by CTC.

"The future is mainly in the hands of radiologists active in this field," Laghi predicted. "We need vendors to provide us with the right tools. We should continue working to improve on the procedure from a technical point of view, with more comfortable bowel preparation, minimisation of radiation exposure and faster and more accurate reading, possibly with the help of computer-aided diagnosis software. But we should also pursue other goals, including the development of a programme of QA and strong governance, plus audit and training."


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ECR TODAY 2011

Mobile Guide

Friday, March 4, 2011

HIGHLIGHTS

ECR TODAY 2011

Friday, March 4, 2011

The 3 P's of CT colonography: polyps, protocols and politics

- Chairman's introduction
  S. Mulligan, London/UK
  CT colonography in 2011: how far has it come
  P. Lefere, Roeselare/BE
  Current status of reimbursement
  A. Laghi, Latina/IT
  Quality, training and accreditation
  D. Burling, London/UK
  CAD: friend or foe?
  S. Mulligan, London/UK
  Panel discussion:
  In 2011, should CTC now be the primary method of colorectal investigation in my hospital?

Left: Coronal reformed view showing a pedunculated polyp of the sigmoid colon.
Right: Volume-rendered endoluminal view of the same pedunculated polyp. In both images, the curved arrow indicates the stalk, and the straight arrow indicates the head of the polyp. (Provided by A. Laghi)

Left: Large pedunculated polyp in the sigmoid (left) and in the transverse colon (right). Corresponding 3D image of this pedunculated polyp with a 2 cm head (left arrow). (Provided by P. Lefere)

Left: Small 7 mm polyp in colon, drowned in tagged fluid in supine position (white arrow). Right: Corresponding 3D view in prone position shows the same polyp (left arrow). (Provided by P. Lefere)
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Vascular disorders
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dyspnea, respiratory distress

Gastrointestinal disorders
vomiting, nausea, dry mouth, oral discomfort, salivary hypersecretion

Skin and subcutaneous tissue disorders
rash, pruritus, maculopapular rash, hyperhidrosis

General disorders and administration site conditions
chest pain, injection site reactions, feeling hot, chills, discomfort, fatigue, malaise, feeling abnormal. Laboratory ... of amylase, leucocyturia, hyperglycemia, elevated urine albumin, hyponatremia, elevated inorganic phosphate, decrease of serum proteine, leucocytosis, hypokalemia, elevated LDH were reported in clinical trials. ECGs were regularly ... without any associated adverse clinical events. In very rare cases anaphylactoid reactions leading to shock may occur.

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Join our Satellite Symposium “Advances in Contrast Enhanced MRI – Efficacy, Safety and Applications” Friday, March 4, 12:30 - 13:30, Room D1

The Fine Art of Liver Imaging

Invitation

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CT of a composite Congo fetish

By Marc Ghysels

This Yaka figure collected in the region of Popokaluka, south Bandundu, Democratic Republic of the Congo by colonial administrator A. Verschaffelt and given in 1931 to the Royal Museum for Central Africa in Tervuren (RMCA, Inv no. EO.0.0.32982, H. 26 cm, Crossopteryx febofriega) looks like a carved head sitting on top of a compact textile ball to which an assortment of small items have been attached: pieces of bamboo, four Möbius strips made of plated fibre and shells.

Thanks to Dr. Anne-Marie Bouttiaux, chief curator of the Ethnography Division of the RMCA, it was recently taken to the Ixelles Hospital to be scanned. The operation was not designed to dispute doubts about its authenticity but to shed light on its very structure and try to pierce the secrets of its inner life when it first came into being. The idea was to write another page about its ‘social life’, to borrow the now famous title of Arjun Appadurai’s book, in the sense that objects, like people, can have a private and social life.

The CT shows that the head poking out of the bundle is in fact the head of a squatting wooden figure carved in the round. Magical substances are tucked away in a cavity in its belly. There is clear evidence that the object was made in several stages and was perhaps adapted to something other than its original purpose. There would certainly have been no point in carving the figure fully if it were to be handled up in its charges. Could it first have been used as a small carved squating figure invested with power by the substances lodged in its body?

Close observation reveals that an inner layer of cloth was wrapped around the statute, perhaps in an attempt to homogenise the carved surface before adding what was to become the stuffing of its present spherical form.

Soil, lengths of bamboo filled with various powders and blocks of compact substances, particularly fragments of pottery, have been used as stuffing. The assortment of decorative and ritual items (small cloth bags, Möbius strips made of vegetable fibre, bamboo...) attached to the outside of the ball makes the fetish powerful in both appearance and function. While he was adding the ingredients that would endow it with magical powers, the artist clearly took aesthetic pleasure in harmonising the whole figure.

This brief review of a Yaka fetish CT gives once more a glimpse of the many possibilities opened up by the use of CT scanners to probe art works.
CIRSE 2011, Europe’s most comprehensive forum for minimally invasive image-guided therapy, will offer more than 250 hours of educational and scientific presentations streamlined around seven major topics, hands-on workshops, foundation courses, learning centres, industry symposia, an all-electronic poster exhibition and the largest CIRSE exhibition ever.

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Dual energy capabilities open up spectacular new avenues for CT

By Philip Ward

CT appears to be entering an exciting new phase in its remarkable development, and it looks poised to spring a fresh set of surprises upon the world of clinical radiology.

The fast acquisition capabilities of modern scanners has opened the door to the fourth dimension (time), where a time-course CT scan can provide clinical information about blood flow, perfusion and other physiological measures regarding organ function. The door to the fifth dimension (energy) has been opened by dual energy acquisition techniques, which are made possible by dual source systems or rapidly switching x-ray source scanners.

"With the technological advances, CT has gone beyond Hounsfield numbers. Quantification of iodine, or better of iodine distribution maps, and kinetic modelling to derive regional blood flow, blood volume and measures of vascular leakage such as permeability surface area product are changing how we approach the imaging assessment of cerebrovascular, cardiovascular disease and cancer," asserted Dr. Vicky Goh, consultant radiologist at the Paul Strickland Scanner Centre, Mount Vernon Hospital, Northwood, U.K.

At this afternoon's New Horizons Session, she will focus on CT perfusion, a quantitative technique that uses rapid sequences of CT images after bolus administration of intravenous contrast to measure physiological processes related to the microvasculature of tissues. The technique can provide surrogates for tissue hypoxia, as well as physiological processes such as vasodilatation that represent vascular responses to hypoxia. With CT detectors, shorter gantry rotation times, table-toggling, radiation dose reduction and software corrections for image mis-regISTRATION can make these innovations possible, noted Goh, who is due to become chair in cancer imaging at King's College London during March 2011.

CT contrast perfusion is most established for cerebrovascular and cancer assessment, and consensus guidelines now exist for the acquisition and processing of perfusion studies for the brain and body. The main applications have been the confirmation of stroke diagnosis and extent, identification of penumbra, and selection of patients for thrombolysis, as well as lesion characterization of penumbra, and selection of patients for thrombolysis, as well as lesion characterization at dual energy, "he noted.

"It must be remembered, however, that the output of the low-energy tube must generate a relatively artifact-free image, so there is a patient size limitation." Dual energy CT (DECT) allows the classification and separation of different materials because CT numbers at each voxel can be compared between two different tube energies. By analysing the available knowledge of the absorption of materials at different x-ray energies, materials can be separated, explained Guimarães. Routine contrast-enhanced abdominal CT at 120 or 140 kV exploits the tissue and perfusional differences between normal anatomy and pathology because the presence of intravenously administered contrast increases the conspicuity of disease. The signal of iodine at 80 kV is approximately twice that at 140 kV, so DECT can highlight pathologies that become more conspicuous with the use of intravenous iodinated contrast.

The difficulty with the use of low-kV, single-energy CT is increased image noise, but in DECT, the noise of the low-kV data is offset by the decreased noise of the higher-kV data, and this can be very useful for visualisation of hypoxic and hypervascular lesions of the pancreas and to increase the identification of hypervascularisation in the small bowel, for instance.

"Iodine-containing pixels can be identified and then highlighted using colour overlay techniques. Using single-energy CT, it is difficult to differentiate between a hamartomatic renal cyst versus a papillary renal cell carcinoma. By classifying pixels as containing iodine using DECT, a single contrast-enhanced pass through a renal mass may be able to clarify the issue of whether a renal lesion has minimal contrast enhancement," he said.

Iodine identification can also be used to create virtual non-contrast images by removing the iodine-containing voxels. Creation of a virtual non-contrast image set from a contrast-enhanced nephrographic or pyelographic phase dataset can lower radiation dose if an unenhanced scan can be avoided, and this can be used to identify renal stones from surrounding iodine-containing urine. However, this approach is less efficient in obese patients and it fails to detect a small minority of stones less than 3 mm in size.

During his presentation, Guimarães will describe many more examples of the clinical advantages of DECT, including bone removal techniques and identification of monosodium urate crystals for the diagnosis of gout.

Illustration: example of the increase in the signal of iodine that occurs when superimposed is a lower kV image. The images were obtained in the same acquisition in the pancreatic phase (35 seconds). The image on the left was acquired with 140 kV, while the image on the right was obtained with 80 kV. Notice how the attenuation of pancreatic parenchyma (liver) is much higher on the right image. (Provided by Dr. Luís Guimarães)
MRI can be of value for detecting cancer recurrence in the treated breast, but it con-
tinues to arouse controversy when it comes to its indications. Any discussion of the
potential applications of MRI for pre-treat-
ment and for screening high-risk populations
tends to raise more questions than answers.

There is an urgent need for radiologists to be
clear about the indications for MRI and to be
aware of its advantages and limitations, espe-
cially in cases of high-risk, noted Dr. Corinne
Balleyguier, a radiological cancer specialist at
Institut Gustave Roussy, Villejuif, Paris. Women
carring BRCA1 or BRCA2 genes have a 70% to 80% chance of developing cancer, and
require a yearly examination with mammog-
raphy, ultrasound and MRI, and while ultra-
sound and mammography can detect around half of cancers in younger women with dense
breasts in this population, MRI can detect between 80% and 100%, she added.

“One of the main problems with breast MRI
is that its high sensitivity makes for a ‘false
positive’ rate of 20–30% in this indication with
the potential of some of these false posi-
tives resulting in stressful and expensive MR-
guided biopsies. Despite this, the advantages
of MRI for these high-risk patients outweigh
the danger of false positives,” said Balley-
guier, who will be a speaker at this afternoon’s
refresher course on breast MRI.

A gain in survival for BRCA1 mutation car-
diers due to an earlier diagnosis of highly
aggressive triple negative cancers with MRI is probable, but still has to be demonstrated.

“Another issue still open to debate is the
possibility that MRI in this indication can
replace mammography, avoiding radiation exposure for high-risk patients. BRCA1 and
BRCA2 mutation carriers who are more sen-
tive to radiation than the general popula-
tion,” said co-speaker Prof. Francesco Sardanelli,
EuroAIM director, University of Milan School of Medicine and director of radiology
at the IRCCS Policlinico San Donato, Italy,
who will focus on evidence-based controver-
sies at today’s session. Evidence-based medi-
cine (EBM) is a key topic for medical profes-
sionals, including that of radiologists, the
goal of which concerns ethics (i.e. the best
for patients) and economics (notably
avoiding needless examinations and treat-
ments), he elaborated.

Perhaps the most controversial indication of
breast MRI is to date for staging of breast can-
cer. The discovery of additional cancers by
MRI that were undetected by mammography
during staging throws patient management into
question and so far no studies point to a
clear gold standard, commented Sardanelli.
“We see more with preoperative MRI but we
do not know if this has a positive impact in
terms of patient outcome. This debate will
continue in the next few years and its conclu-
sion is not around the corner.”

Additional MRI findings have an impact on
ipsilateral treatment planning in about 11% of
patients, causing wider local excision or shift-
ing from mastectomy to conserving surgery to mastec-
tomy, while in about 3–4% of patients, occult
contralateral cancer was discovered with MRI.
“A percentage of these lesions – how many, we
do not know – could be cured with radiation
therapy or chemotherapy. Thus, there exists a
real risk of over-diagnosis and over-treatment,
especially for ipsilateral findings,” he said.

Balleyguier echoed Sardanelli and pointed to
the need for long term studies of at least ten
years to follow patient outcomes.

Although we know through a recent five-year
study that recurrence is lower in patients who
undergo pre-treatment MRI, we don’t know if
these women survive longer than women who
don’t,” said Balleyguier. “However, we
know that recurrence rate is an element of
poor prognosis. If we can avoid local
recurrence and provide better treatment at
the start, then it makes sense that survival
will improve.”

At today’s session, she also intends to discuss
technical aspects for obtaining high qual-
ity images, one among several criteria for
optimal interpretation. Part of her talk will
deal not only with the use of contrast but
also the importance of T2 imaging to disting-
uish between malignant and benign lesions.
“Benign and malignant lesions can both
enhance. In this case, we look at T2-weighted
imaging, and if the enhanced lesion is very
bright, it is usually not a cancer but a benign
lesion such as a lymph node or cellular
fibroadenoma. Comparison of T2 and T1 plus
contrast can help to decrease false positives.”

The emerging role of diffusion-weighted
imaging (DWI) in diagnosis may also pro-
mote discussion. Sardanelli identifies new
non-contrast MRI approaches such as highly
spatially resolved water-selective sequences
as the next decade’s major trend. Refine-
ment of current non-contrast approaches,
especially DWI, may become a substitute for
contrast-enhanced MRI, as has been demon-
strated in studies on the detection of residual
tumour after chemotherapy. This has poten-
tial implications for screening and for the
general female population, but radiologists
have to prove the high negative predictive
value of these approaches in screening.

Balleyguier pointed to the possibility of clini-
cal CAD systems that could detect and classify
more lesions and better characterise them,
but she admitted that as yet there was not
enough data to firmly support this develop-
ment. The advantages and limitations of 3T
breast imaging will be discussed at the ses-
Sion. The role of CAD, in terms of kinetic
tasks, lesion-targeting for MR-guided biopsy,
and correcting movement artefacts as well as
future developments in the pipeline for CAD
morphology tools, will also be covered.

To improve image interpretation in breast
MRI, she thinks personal evaluation and
auditing can be useful. Radiologists need to
work on sequences with various protocols on
different machines to improve quality, and
results should be evaluated. If the radiologist
detects additional lesions and the patient has
to have surgery, then you should be interested
in histological results and treatment in order
to determine if the correct recommendations
were made, she explained. “Radiologists must
face the consequences of what they say to
improve their level.”

A 38-year-old woman with palpable nodules at the lower left breast. Mammography (upper panels) shows an extremely dense pattern without any suspicious
finding on either right or left breast. Ultrasound (not shown) demonstrated three hyperechoic nodules. One of them was biopsied, revealing invasive ductal cancer. MRI (lower
images) shows three enhancing lesions confined in the lower external quadrant of the left breast. Moreover, one enhancing lesion is found in the right breast (arrow),
not detectable at targeted second look ultrasound. The patient refused MR-guided biopsy of the contralateral lesion. Left mastectomy was performed, confirming multicentric
breast cancer. The discovery of additional cancers by MRI that were undetected by mammography and ultrasound and MRI, and while ultrasound and mammography can
detect around half of cancers in younger women with dense breasts in this population, MRI can detect between 80% and 100%, she added.

“Another issue still open to debate is the
possibility that MRI in this indication can
replace mammography, avoiding radiation exposure for high-risk patients. BRCA1 and
BRCA2 mutation carriers who are more sen-
tive to radiation than the general popula-
tion,” said co-speaker Prof. Francesco Sardanelli,
EuroAIM director, University of Milan School of Medicine and director of radiology
at the IRCCS Policlinico San Donato, Italy,
who will focus on evidence-based controver-
sies at today’s session. Evidence-based medi-
cine (EBM) is a key topic for medical profes-
sionals, including that of radiologists, the
goal of which concerns ethics (i.e. the best
for patients) and economics (notably
avoiding needless examinations and treat-
ments), he elaborated.

Perhaps the most controversial indication of
breast MRI is to date for staging of breast can-
cer. The discovery of additional cancers by
MRI that were undetected by mammography
during staging throws patient management into
question and so far no studies point to a
clear gold standard, commented Sardanelli.
“We see more with preoperative MRI but we
do not know if this has a positive impact in
terms of patient outcome. This debate will
continue in the next few years and its conclu-
sion is not around the corner.”

Additional MRI findings have an impact on
ipsilateral treatment planning in about 11% of
patients, causing wider local excision or shift-
ing from mastectomy to conserving surgery to mastec-
tomy, while in about 3–4% of patients, occult
contralateral cancer was discovered with MRI.
“A percentage of these lesions – how many, we
do not know – could be cured with radiation
therapy or chemotherapy. Thus, there exists a
real risk of over-diagnosis and over-treatment,
especially for ipsilateral findings,” he said.

Balleyguier echoed Sardanelli and pointed to
the need for long term studies of at least ten
years to follow patient outcomes.
Radiologists and gastroenterologists increase their cooperation for improved efficiency

By Mélisande Rouger

Multidisciplinary work is key to modern medicine and one example of this is the smooth cooperation between radiology and gastroenterology. Imaging has become central to the detection, staging and follow-up of many diseases, including colorectal cancer, one of the most widespread carcinomas worldwide. Technical refinements such as the recent introduction of virtual colonoscopy using CT have notably improved its early diagnosis. Experts will discuss how to further improve results during the ESR meets Gastroenterologists’ session today at ECR.

Optical colonoscopy (OC) is the gold standard for the detection and post-treatment follow-up of colorectal cancer. Its practice enables biopsy and treatment of polyps during the same session. But virtual colonoscopy (VC) offers specific advantages, such as the possibility of reviewing images repeatedly. VC is more comfortable than OC, and it enables the imaging of patients who cannot undergo a complete examination with colonoscopy due to anatomical changes or other technical difficulties. Depending on the specific case, VC can also be a good alternative in the case of low prevalence.

"Everybody agrees that incomplete OC is an excellent indication for VC as well as individual detection in cases of low anticipated prevalence," said ECR 2011 Congress President Professor Yves Menu. "The use of radiation and chemotherapy has also increased chances of survival. In parallel, the use of radiation and chemotherapy has also increased chances of survival. We should recognise that the future of medicine is to improve prevention and personalisation. This will not be possible unless all organisations cooperate closely, because it concerns not only the gastroenterologist and the radiologist but also other scientists like biologists, epidemiologists and many more," Professor Menu said.

Fortunately, things are running smoothly between gastroenterologists and radiologists. "Our collaboration is excellent. The basis for all decision making in gastroenterology and many other clinical specialties is multidisciplinary, and in this process radiologists are a very important part," Professor Hultcrantz said.

"Although we have potential competition between endoscopy and imaging, for instance with the development of endoscopy, small bowel imaging versus capsule endoscopy, and virtual versus optical colonoscopy, the relationship between gastroenterologists and radiologists has always been more than a scientific debate rather than a turf battle. Although the discussions are sometimes passionate, neither the gastroenterologist nor the radiologist would ever fight against scientific evidence," Professor Menu said.

The participation of the UEGF in the ‘ESR Meets’ initiative this year will certainly provide more visibility for this successful cooperation.
Imaging children from head to toe

By Mélisande Rouger

Paediatric radiology is not recognised as a subspecialty in many European countries. Training in this field is often very limited or non-existent, leading to major shortages of specialists right across Europe. As a consequence, trainees have to gain knowledge where they can while general radiologists must keep up to date with new ways of imaging children. Both groups will be given this opportunity at ECR, with a dedicated foundation course detailing the most common situations encountered in paediatric imaging.

Many conditions encountered in infants and young children are not seen in adults, and as a result different protocols to those used in the adult population are often required for imaging these conditions. Many general radiologists have to perform imaging in children at some point in their careers, so it is crucial that they know and understand the main differences in this field.

"More than half of paediatric radiology examinations are performed by general radiologists, so it is very important to have a general overview for people who would not necessarily attend specialised paediatric radiology meetings," said Dr. Veronica Donoghue, paediatric radiologist at the Children’s University Hospital, Dublin, who will coordinate the course.

Covering all body regions, experts will present typical scenarios and guidelines on how to image young patients.

In recent years, there has been controversy as to the significance of vesicoureteric reflux in urinary tract infections in children, and much discussion as to how these children should be investigated. Traditionally, vesicoureteric reflux has been considered the major risk factor for urinary tract infection and renal damage. However, it has been shown that infection and renal scarring occur without reflux and that in some patients reflux with associated infection does not cause renal damage. Besides, the role played by abnormalities of bladder function is increasingly recognised.

"The current guidelines for investigation published by the National Institute for Health and Clinical Excellence (NICE) in the UK are much more conservative than heretofore and are controversial. The European Society of Paediatric Radiology published its own imaging recommendations in 2008. These will be discussed together with approaches to common scenarios in the different age groups," Donoghue said.

With better equipment and better training in foetal ultrasonography, many congenital abnormalities are now detected early in pregnancy. "An increasing number of features with renal tract dilation are being detected and it is important to discuss how to investigate the various grades of foetal hydronephrosis, as it is essential not only to reduce the number of unnecessary investigations, but also to avoid invasive procedures and to reduce the radiation burden in children," she said.

The use of foetal MRI provides much additional information in many instances. It allows for more detailed delineation of congenital brain anomalies, which is very helpful to the obstetrician when counselling the parents and predicting prognosis. It also provides, for example, information about the foetal airway in cases of congenital neck and thoracic masses, which helps in planning the method of delivery of the foetus.

CT is commonly used in the adult population to investigate symptoms relating to the abdomen and pelvis. Because of the increased sensitivity of children to radiation and their longer life span, non-ionising methods of investigation such as ultrasonography or MRI are employed where possible. All paediatric CT examinations must be fully justified and the radiation doses should be lowered to just sufficient to answer the clinical question.

"This is really important. There is a lot to do in educating radiologists and radiographers on the importance of adjusting the parameters on their CT scanners in order to decrease radiation doses in children, even if it means sacrificing the acquisition of 'pretty images,'" Donoghue said.

Another point the session will explore, among others, is the delicate topic of non-accidental injury or child abuse. In infants, certain lesions, such as the classic metaphyseal lesion and posterior rib fractures are sufficiently characteristic of inflicted trauma. Other fractures are less specific for abuse, but combined with clinical findings they may add support to this diagnosis, and the course will present several scenarios.

"It is really important for the trainees to be aware of this condition and to be familiar with the specific findings, so that they know when to suspect it," she added.
BI-RADS 3 lesions prove controversial and pose management challenges

By Frances Rylands-Monk

Classification of lesions has very relevant consequences, not only in terms of patient outcome but also for further diagnostic assessment in the context of increasing expenditure incurred by health systems. For breast lesions, BI-RADS 3 allows the possibility of a 'wait and see' approach instead of immediate biopsy. Given the growing number of incidental benign findings during screening and clinical breast imaging, this can be a key benefit.

The BI-RADS descriptors and classification system has provided a common formal language. Before it was established, confusing terms such as fibrocystic disease or dysplasia were commonly used in reports, and many general physicians would mistakenly think a patient had a pre-malignant disease when the report simply described normal breasts displaying high density patterns.

Another advantage of BI-RADS has been the introduction in the radiology report of a recommendation, including follow-up imaging and interventional procedures. This increases the radiologist's responsibility and also enhances his or her clinical role. But a limitation of the system pertains predominantly to the BI-RADS 3 category, which relates to cases of less than 2% probability of cancer, a rate which can only be evaluated retrospectively on a large number of cases.

"The classification system isn't an exact science. The main potential pitfall is incorrect classification," said Dr. Luis J. Pina, a radiologist at the University Clinic of Navarra in Spain and a speaker at today's special focus session. "Specifically, the BI-RADS 3 category can become a 'holding tank' for problematic lesions which are so categorized without further diagnostic procedures. This typically occurs when inexperienced radiologists feel uncertain about diagnosis."

If a BI-RADS 4 or 5 lesion is erroneously classified as category 3, the diagnosis of malignancy will be delayed. Conversely, if a BI-RADS 2 lesion is classified as category 3, patients may undergo unnecessary anxiety and potentially needless intervention.

"How many radiologists specifically know that you can give a BI-RADS score to a lesion, to a breast, to a woman, for a single examination or for the series of examinations?" asked Sardanelli. "After a breast MRI is performed as a third step after mammography and ultrasound, a conclusive BI-RADS must be defined at the end of the report, a suspicious cluster of microcalcifications, even though non-enhancing on MRI, remains a BI-RADS 4 because it may be a ductal carcinoma in situ (DCIS) with low angiogenesis."

After detection of a possible lesion using a front-line method such as standard two-view mammography, additional techniques should be used if there is reasonable suspicion of cancer. Superimposed breast tissue can mimic a malignant lesion. If the lesion exists, other techniques can help the radiologist to decide about the degree of concern and to classify the lesion correctly. These will be discussed during today's session. In addition, speakers will cover the influence of clinical data on classification.

Risk profile is increasingly important in personalised medicine, and this is equally true in breast imaging. Carriers of BRCA1 or BRCA2, high risk related to a previous cancer, and a high-risk lesion such as lobular neoplasia, atypical ductal hyperplasia or papillomatosis all change the likelihood of cancer for a 'probably benign' finding initially thought to be BI-RADS 3 to BI-RADS 4. Management must then be changed accordingly.

"Positive family history for breast cancer, the presence of a lump or a palpable lesion, a nipple discharge, pregnancy or the intention to become pregnant, a recently diagnosed breast cancer and many other circumstances influence the final assessment," Pina said.

In screening, BI-RADS 3 should be avoided, particularly because some screening programmes do not allow for a three to six month re-evaluation. In the clinical setting, the low positive predictive value (PPV) of BI-RADS 3 makes a short interval follow-up possible as an alternative to biopsy.

Today most biopsies are performed percutaneously in an outpatient setting, under local anaesthesia, with no scarring and at low cost. This evolution in breast biopsy has resulted in increasing numbers of biopsies, even in probably benign lesions.

Experts point to the fact that the definition of less than 2% probability of cancer is often ignored. A relatively large number of BI-RADS 3 findings tend to be biopsied due to the category being confused with BI-R, the European category of findings with a relatively low cancer probability but with a probability that is still higher than BI-RADS 3.

"Prospectively speaking, radiologists should put all the cases they believe to be associated with a cancer probability from 2% to 95% in the category of BI-RADS 4," Sardanelli said.

In an ideal world there would be no BI-RADS 3 classifications, according to Pina. Recognising the impossibility of this, however, he suggests that this controversial classification should not exceed 7% of all mammograms.

"Even this figure can be reduced through previous imaging comparison and complementary studies, including non-imaging findings such as palpation, clinical symptoms and history," he noted.

Delegates at today's session are likely to be seeking clear 'golden' management rules on when to biopsy a BI-RADS 3 lesion and when to watch, particularly if they are keen to understand how to reduce the risk of legal consequences of delaying cancer diagnosis because of using this category. For Sardanelli, the answer is clear: cases of a PPV for cancer of less than 2% should be checked and checked again.

"Radiologists should be trained for the responsibility of diagnosis. This is what they are paid for," he stressed. "If, and only if, your BI-RADS 3 categorisation is correct, then unless the patient is anxious about waiting, the logical choice is to watch and follow up at six months. The only advantage to perform a large number of useless biopsies that would reduce your credibility and that of the centre where you work."
Oncologic imaging moves forward in assessing therapy response

By Frances Rylands-Monk

To counter the burden of cancer on healthcare systems and imaging departments, radiologists need to better understand how treatment is changing, as well as novel ways of measuring response, in order to optimise timely patient management. ECR 2011 delegates will discover that PET is proving particularly valuable in assessing how cancer patients respond to treatment.

As more targeted treatments for cancer continue to emerge, healthcare professionals’ expectations of response evaluation are changing fast. Previously, oncologists would look at mass dimensions changing after cytotoxic treatment, but newer treatments may produce metabolic changes that are just as important as measures of treatment effect. An understanding of functional effect, therefore, is assuming ever greater importance for oncologists.

Functional imaging to measure cellular and metabolic effects, usually by means of a PET scan with an FDG (fluorodeoxyglucose) tracer, is commonly used in lung and oesophageal cancer and malignant lymphoma. Clinical trials involving newer tracers that can produce details about cell proliferation, the induction of apoptosis and metabolism are at an early stage of development, but if they prove conclusive, these markers look set to find their way into the clinical setting over the next few years.

The use of functional MRI to measure metabolism and blood flow is also under evaluation in gauging the response to treatment of newer treatments but, while promising, these markers lack the precision to find their way into the clinical setting over the next few years.

“The pharmacodynamic read-outs provided by MRI indicate whether or not a drug is acting by the mechanism one hopes or expects, proving a useful tool in drug development,” said Prof. Peter Johnson, professor of medical oncology at the Cancer Research UK Centre, Southampton General Hospital, Southampton, UK. He will be speaking at today’s special focus session entitled ‘Tumour response to treatment: RECIST, desist or insist?’

In the UK’s cancer research arena, there are more than 250 ongoing trials at any one time with novel and functional imaging used throughout. In phase I, for example, pharmacodynamic readouts are helping determine whether a drug is hitting the intended target in the tumour. In phase II, functional imaging is being used as a surrogate endpoint to predict response to a novel agent. In phase III, the role of functional imaging in the treatment algorithm is being tested, using FDG-PET, for example, to explore whether radiotherapy can be omitted or drug therapy de-escalated in the treatment of Hodgkin lymphoma patients.

Prof. Larry Schwartz, chairman of radiology at Columbia University College of Physicians and Surgeons, USA, also stresses the need for standardisation to allow consolidation and further development of techniques for imaging response to therapy. He cites an earlier and greater recognition in Europe, compared to the U.S., of the need to standardise because of the existence of disease-focused centres.

“Now we need to improve and propagate the information we have already. There is a capacity to standardise what didn’t exist a few years ago due to growing recognition of the importance of this field, leading to better quantitative imaging,” he noted.

Today Schwartz will focus on functional imaging and improved quantitative non-functional CT and MR imaging.

“It is clear that these techniques will become routine over the next three to five years. It is now a question of understanding capabilities. We need to apply imaging techniques properly to the therapeutic options available, with specific biomarkers applied to specific tumour type and therapy,” he stated.
Molecular imaging starts to deliver on its promises after a slow start

By John Brooky

The introduction of molecular techniques in radiology has so far been fairly underwhelming. Microscopic bubbles and radioactive isotopes injected as contrast agents hardly seem the stuff of an advanced science, while the effects can be spectacular, as in the case of the sudden illumination of vascular networks or a dynamic view of glucose uptake at a cellular level, these images seem only to be enhancements of images from the well-established modalities of MRI, CT and ultrasound.

For a generation of radiologists accustomed to seeing each year further innovations for acquiring ever more stunning images, molecular techniques would seem to fit easily into radiology’s rapidly expanding toolbox. Taking a closer look, however, these modest precursors of molecular imaging may eventually evolve into powerful techniques that can make inroads into radiology’s well-defined practice areas.

At this afternoon’s refresher course, “Clinical Potential of Molecular Imaging,” both the threats to traditional radiology as well as the opportunities posed by this emerging science will be discussed and debated. The session offers a review of new probes and techniques being tailored for clinical use, as well as a look at the value these novel visualisations bring in two major fields of diagnoses, cardiovascular disease and oncology.

The visualisation of metabolic functions using biomarkers promises to increase the sensitivity of conventional imaging modalities for diagnosing disease, but it also demands that radiologists have a solid understanding of molecular biology to interpret results. Other agents under development involve the use of optical imaging technologies, which is a totally new field for radiology; he said. Furthermore, some molecular agents may hold a challenge for interventional radiology, given their ability to “soo-and-treat” disease by allowing the radiologist to target a specific cancerous state on a molecule designed as a therapy for the disease.

Radiologists need to stop seeing themselves only as reviewers of images and more as doctors investigating the pathophysiology of a patient for the diagnosis of disease and the evaluation of therapy response, according to Prof. Fabian Kiessling, who leads the department of experimental molecular imaging at the Technical University of Aachen in Germany. In his presentation, he will highlight where molecular imaging has already entered routine clinical use, such as the family of agents for positron emission tomography and Pramovist, a gadolinium-based diethylenetriamine penta-acetic acid (DTPA) agent for liver conditions.

“Nuclear medicine generates ugly images that seem to be only dark blotches, yet there is a lot of radiologists can learn from the intensity of these spots, such as determining if tissue is proliferating,” said Kisssling, noting that the next wave of molecular imaging to enter the clinic will be contrast-enhancement agents for ultrasound that target intravascular conditions such as angio-neovascularisation, he said, will hold a challenge for interventional agents.

“Molecular imaging is going to fundamentally change radiology, expanding our practice and then interpret the image any way they wish, but some of them do not really understand how the systems work, creating a serious risk for false diagnoses, he stated. Conversely, radiologists have an ability to critically review images, search for artefacts that may be present, and understand the physics behind the imaging technology.”

Additionally, he will explore the challenges for radiology in the newer class of agents using optical imaging techniques. These technologies are fast, cheap, and can be used by anybody, but this can cause problems. Internal medicine specialists or surgeons can inject a dye, create an image and then interpret the image any way they wish, but some of them do not really understand how the systems work, creating a serious risk for false diagnoses, he stated. Conversely, radiologists have an ability to critically review images, search for artefacts that may be present, and understand the physics behind the imaging technology.

Frijia reckons the convergence of molecular imaging and radiology is essential, if not inevitable. “Molecular imaging is going to fundamentally change radiology, expanding our practice into molecular biology, introducing molecules designed for specific modalities and introducing new modalities. For me, this is not a battle with other disciplines, it is a principle of giving better patient care,” he said, adding that radiologists need to take a more integrated approach to molecular imaging.

Radiologists have already proven with CT, MRI and ultrasound that they are capable of incorporating new knowledge and skills and integrating them into training programmes. “We need to adapt our practice to accommodate this new field. For future generations, it is clear that basic background and training will be very different, with molecular biology being an essential part of their working knowledge,” he concluded.

Report from the Slovene Association of Radiology

By Dimitrij Kuhelj, SAR President

This year featured an important anniversary for the Slovene Association of Radiology (SAR), as it celebrated 80 years since its foundation as the Slovene Section of Roentgenology and Nuclear Medicine by Prof. Haban. Since its beginnings it has been the official educational and scientific organisation of Slovene radiologists, promoting and developing radiology in Slovenia through the exchange of information, and scientific and educational involvement with the goal of improving patient care. Slovene radiologists gathered at the society’s general assembly in Nova Gorica in November for a celebration and members’ elections. The scientific and social programme followed for two days, celebrating another important milestone in Slovene radiology – 30 years of interventional procedures at the General Hospital Nova Gorica. The assembly was attended by many Slovene radiologists involved in interventional radiology. The presentations included most of the fields that Slovene interventional radiology deals with, and all the centres performing interventional radiology in Slovenia were actively involved, as well as Slovene interventional radiologists abroad. Presentations were interactive, including manners of the most interesting procedures with comments and questions, resulting in a fruitful debate and exchange of opinions.

Our traditionally good cooperation with neighbouring radiological societies, which has resulted in several meetings, was this year extended with the first Serbo-Slovene radiological meeting. An invitation from the president of the SAR to the 96th Congress of the Argentinian Radiological Society resulted in an educational exchange for our members, and the first Argentinian radiologist was expected in Slovenia for the end of February 2011.

Active attendance at ECR 2011 was promoted, resulting in an increased number of abstracts submitted for the meeting. Members of the SAR, as well as radiographers, nurses, physicists and industry representatives were invited to the 3rd Slovenian evening during ECR 2011, since the SAR hosted more than 100 Slovenians involved in radiology at the 2nd Slovenian evening in Vienna during ECR 2010.

For the first time the Slovene Ministry of health has outlined the shortage of Slovene radiologists, lacking 38 doctors (38%), compared to the European average. Still, only a small number of resident places and attempts to reduce working conditions were noticed, and the prices of MR and CT examinations were reduced by the National Health Insurance. The SAR aims to be involved in future price negotiations, which may be a tough battle, since it has no formal influence at present.

Transverse (left) and sagittal (right) 18F FDG PET images of a human head based on an MR image. The MR image was acquired with a dedicated 3D radial ultrashort echo time contrast, allowing the distinction of cortical tumour structures and ax organs and thus the generation of a correction map for the PET data with high accuracy. (Provided by V. Schatz, Esth RAVITT (Buchner & Philipps)

Ljubljana is one of Slovenia’s centres of radiology.
Consensus grows for switch from fluoroscopy to MRI in pelvic floor imaging

By Edna Aubrey-Ward

After many years of using conventional fluoroscopic evacuation proctography, or defecography, radiologists at London’s University College Hospital have switched over entirely to MRI proctography for imaging of the pelvic floor. Fluoroscopy is only used when a patient has a contraindication to MRI.

“I have been won over to the extent that now I am not too sure that the fluoroscopic technique has any significant advantages over MRI,” said Prof. Steve Halligan, noting that MRI lack of ionising radiation is critical in a group of patients comprising mostly young women.

At this afternoon’s special focus session, he will spell out the clinical rationale behind the change to MRI. In a recent prospective study conducted at University College Hospital, researchers compared the clinical utility of both techniques. Results showed that when clinicians (coloproctologists, urogynaecologists and gastroenterologists) were asked to declare whether they had a preference for either MRI or fluoroscopy, MRI was the clear winner. The fact that MRI is not performed in the physiological position (i.e. sitting down) did not appear to have a material impact on its clinical value.

The concept of moving over to MRI might seem daunting, but in reality the change is easy. The concept of moving over to MRI might seem daunting, but in reality the change is easy. MRI has emerged as an alternative method of imaging in the evaluation and understanding of disorders of the pelvic floor, due to its multiplanar capability, high soft tissue contrast and adequate temporal resolution.

At today’s session, she will discuss how MRI can demonstrate the main dysfunctions of the posterior pelvic floor, and she will also outline current clinical indications and implications of dynamic MRI of the pelvic floor. A major advantage of MRI is that it provides a unified view of the pelvic floor, and diseases of the anterior, middle and posterior pelvic floor compartment can be adequately assessed in a single examination. It can also help to reduce examination time, costs and patient discomfort, but importantly it provides a highly accurate and non-invasive evaluation of a unitary system that is often assessed and treated separately. Furthermore, because dynamic MRI offers a complete evaluation of the posterior ano-rectal compartment and of the anterior and middle compartments, urogynaecologists and proctologists can be assisted with their clinical diagnosis, she added.

Whilst the examination is neither painful nor particularly disturbing, Maccioni believes that possible causes of discomfort may be related to claustrophobia, the use of a rectal contrast medium, and attempting tricky manoeuvres under unfavourable conditions. It can be difficult, in a closed magnet unit and in the supine position, to attempt functional manoeuvres, and sometimes this may be unobtainable, she added. MRI techniques should be further developed to reduce possible discomfort, and her suggestions for doing this include thorough explanations to patients about the procedure. It is critical because the success of dynamic MRI derives from the effectiveness of the manoeuvres performed, she stated.

Maccioni would also like to see the wider use of dedicated open magnets to allow the examination to be performed in a seated position. In addition, she favours the use of high-field MRI (3 Tesla) to boost understanding of the physiopathological basis underlying these diseases. The use of MR tractography to detect neural abnormalities, and the use of MR spectroscopy for a more detailed analysis of muscular abnormalities underlying some pelvic dysfunctions, are of particular interest.

She expects that historical boundaries between different specialists will be broken down, as a multidisciplinary approach develops. Pelvic floor clinical units, based on teams of experienced physicians, surgeons and radiologists, will become increasingly widespread in the future, she predicted.

Sagittal late exaception shows a cystocele in the middle and posterior pelvic floor compartment. (Provided by S. Halligan)
**TECHNOLOGY FOCUS**

**PET/MR takes centre stage at technical exhibition in anticipation of European launch**

By John Bonner

When the doors of the ECR 2011 technical exhibition burst open this morning, a host of surprises and innovations awaits congress attendees. Arguably the biggest highlight of all is the first PET/MR system ever displayed at the Austria Center, and it looks certain to attract massive attention and interest over the next four days.

A combination of MRI and PET has long been considered as the logical next step in the evolution of imaging modalities, but industry has struggled to deal with the formidable technical challenges of achieving a happy marriage between the two approaches, notably the difficulties of developing a PET detector capable of coping with the powerful static and dynamic magnetic fields generated by the MR coils. GE Healthcare made the first important move in developing the software needed to integrate data acquired through sequential scans made using the two modalities. Then Philips brought the two main items of hardware alongside each other, linked by a revolving table for easy patient transfer, and the company installed the first European system in a hospital in Geneva in April 2010.

Now Siemens engineers have successfully married the two modalities in a single unit, dubbed the Biograph mMR, which the vendor plans to launch commercially later this year. In the meantime, radiologists will be able to examine the prototype on display in the technical exhibition, and if they are lucky, they will get to talk to Prof. Markus Schwaiger and his colleagues from the Klinikum rechts der Isar at the Technical University in Munich. The group has been given the privilege of putting the new machine through its paces.

Dr. Alexander Drzezga, from the university’s department of nuclear medicine, has been responsible for setting up the system, which was delivered in November 2010. It is currently being used to scan up to five patients a day, but that number is likely to grow as the Munich team explores the limits of the unit’s clinical potential. “Many neurological conditions are suitable for evaluation with PET/MR, including neurodegenerative disorders, dementia, epilepsy and brain tumours,” with regard to evaluation of the cardiac system, combined imaging of PET and MR may also show diagnostic advantages, while inflammation and vascular conditions are also areas of interest,” he explains.

Drzezga believes that combining the two modalities offers a number of clinical advantages, not least in eliminating the need for separate diagnostic examinations. Furthermore, the exact anatomical registration of structural and functional/molecular information may improve diagnostic performance, allow direct comparison and improve image quality, for example by motion and perfusion information in organs of the body that do not normally require high signal-to-noise ratio. The Munich team will also be exploring how the performance of PET/MR compares with that of PET/CT. There is some evidence that the superior soft tissue contrast achievable with the newer system will offer significant benefits, even before physicians consider the safety issues involved with any radiation-based imaging technology like PET/CT, suggests Drzezga.

The Biograph mMR is based on the Verio 3 Tesla MR system with a 70-cm bore that provides enough space to position the PET detector ring and its solid-state photodiodes. In getting the two modalities to work alongside each other, the hybrid molecular MR system can scan the whole body in as little as 30 minutes, compared with an hour or more needed for sequential examinations. The machine also incorporates Siemens’ TIM (total imaging matrix) technology, which seamlessly integrates multiple coil elements and RF channels and can reduce examination times by up to 50%, according to the vendor.

**Philips** has been working on its latest MR technology for almost as long as the search for a practical PET/MR hybrid. After an eight-year development project, the company is promoting its Ingenia 1.5 and 7T systems, which it describes as the world’s first digital/broadband MR unit. This incorporates Estream architecture, which digitizes the signal directly in the coil. Vendors have been looking for ways to shorten the analogue part of the signal processing pathway because this offers the potential for reducing signal loss and noise. The Philips approach goes further by digitising the signal within the coil itself and transporting it via a fibre optic cable to the acquisition electronics contained in the scanner cabinet, explains Mauritz Wolleswinkel, global lead for MR marketing.

The company had to overcome huge challenges in miniaturising the components to fit inside the coils and making them tough enough to cope with the hostile physical environment inside the machine, with its strong magnetic fields, eddy currents and temperature changes. “The result offers a gain of up to 40% in the signal to noise ratio and a 30% improvement in throughput and eliminates the need for coil/channel upgrades as the system is totally channel independent,” he stated. “So it is a significant step forward, especially in oncology-related applications. They become hotter, faster and more robust. We can do a total liver examination, including contrast, in less than eight minutes, or a whole body diffusion scan in 15 minutes.”

Improving the patient’s experience when he or she is undergoing an MR examination has been the main focus of GE Healthcare’s latest developments in this modality. This aspect can have a considerable impact on both the diagnostic accuracy of the procedure and on workflow within the department, noted Marie-Caroline Leau, GE’s European MR marketing manager. “If we can create a stress-free environment, the patient feels more comfortable and is less likely to fidget inside the machine and spoil the exam. So we can get a better quality image and make more efficient use of the technologist’s time.”

The main highlight of the company’s offerings at ECR 2011 is a wide-bore 3T MR system, the Discovery MR750w, which incorporates its proprietary ART (acoustic reduction technology) system for reducing scanner noise. GE is also showing its new Optima MR450 1.5T device, which is designed for examining musculoskeletal injuries of the extremities and can free up places on the departmental work list for those patients needing more complex whole body examinations.

Both these machines are commercially available and come equipped with the GEM suite, a set of receive-only RF surface coils. These can be used individually or combined to provide the desired anatomical coverage, including head to toe coverage. Overall, the range covers 98% of examination types. The GEM suite allows for independent selection of 16 coil modes/configurations, and the system will auto-select the configuration that best fits the selected region of interest, the vendor states. Other key features include a total 2015 cm scanning range, fast first scanning in many cases and design features to embrace patients of all shapes and sizes.
New format for a popular feature: EIBIR presents IMAGINE Workshop

By Prof. Wiro Niessen, Rotterdam/NL

At ECR 2011, the successful IMAGINE exhibition will return in an entirely new format. If you want to be introduced to novel and exciting technologies that will influence the future of radiology, it is an event not to be missed.

The IMAGINE exhibition at the ECR has always shown the latest developments in medical image analysis and image-guided interventions by leading academic and industrial research groups. Starting this year, IMAGINE is being organised by EIBIR’s biomedical image analysis platform. The mission of this platform is to promote biomedical image analysis research on a European and international level, to foster collaboration, and to establish educational activities in this field. EIBIR presents IMAGINE is an important activity of the platform, aiming to introduce the radiology community to novel developments that are not yet on the market. In this way EIBIR IMAGINE functions as an ‘antenna’ for developments soon to come.

The developments presented at the EIBIR presents IMAGINE Workshop largely address the potential use of solutions that have been posed by recent developments in biomedical image acquisition. Advances in medical imaging devices have drastically increased our capabilities to (non-invasively) study the human body, by providing detailed three or four-dimensional morphological information on anatomy, function and physiology. Tumours are increasing in size, and heterogeneity of imaging data available for biomedical research and clinical practice have increased enormously. Consequently, the lack of adequate image processing techniques to analyse these data has become a main obstacle.

With these advances, the sheer size, complexity, and heterogeneity of imaging data available for biomedical research and clinical practice have increased enormously. Consequently, the lack of adequate image processing techniques to analyse these data has become a main obstacle.

The EIBIR presents IMAGINE Workshop will address the urgent need for solutions which enable the integrated analysis of complex, heterogeneous imaging data that have been acquired with different imaging modalities and at different time points. The overall aim is to fully exploit the information available from the imaging data for improved diagnosis and therapy.

Relying on the IMAGINE platform, the EIBIR presents IMAGINE Workshop will provide introductions to novel technologies from the researchers that are creating them. There will be some sessions for which participants need to register, and one walk-in session.

The workshop will consist of three lecture sessions, in which the 15 abstracts will be presented, and one interactive workshop session. At the workshop sessions, visitors will get hands-on experience of the techniques and tools. These sessions are at the heart of the ‘EIBIR presents IMAGINE’ vision: to promote introductions to novel technologies from the researchers that are creating them. There will be some sessions for which participants need to register, and one walk-in session.

Proving your skills in an exciting tournament atmosphere

The 4th Post Processing Face-Off Session at ECR 2011

By Dr. Anno Graser, Munich/DE

After the great success in the last three years, the 4th annual Post Processing Face-Off Session will allow you to get an impression of the 3D capabilities and large data volume handling provided by the latest workation technology.

Many of you might have wondered what the name ‘Face Off Session’ actually means, and whether this type of session would actually be worth attending. Well – those of you who have attended one in the past, be it here at the ECR, at the ISCT Meeting in San Francisco, or the EIBIR present IMAGINE Workshop, might potentially remember the session as one that is fun to attend, and exciting, too. Workstations by different vendors are set up on stage side-by-side, and are operated by expert radiologists whose task it is to present clinical cases.

In order to generate a true tournament or contest atmosphere, everyone must show the same level of effort – otherwise the event will not be true to its name. So, the challenge is to select one case or session that is truly challenging and that can be solved in front of the audience, making both the presenters and the manufacturers break out in a sweat.

The workshop will consist of three lecture sessions, in which the 15 abstracts will be presented, and one interactive workshop session. At the workshop sessions, visitors will get hands-on experience of the techniques and tools. These sessions are at the heart of the ‘EIBIR presents IMAGINE’ vision: to provide introductions to novel technologies from the researchers that are creating them. There will be some sessions for which participants need to register, and one walk-in session.

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Born in Germany in 1961, Professor Jörg Felix Debätin studied at the Université Paris XI, 'Gestion et Economie Appliquée', Paris, followed by the University of Heidelberg Medical School, and took the executive MBA course at the Hochschule St. Gallen (HSG) in Switzerland. Licensed as a physician in the European Union, Stuttgart, he became a resident for Diagnostic Radiology at Duke University Medical Center, Durham, N.C., USA, and received an Abdominal Imaging Fellowship at Stanford University Medical Center, California.

Later he became Assistant Professor of Radiology at Zurich University Hospital, Switzerland, Associate Professor of Radiology, Senior Staff Radiologist and Head of Magnetic Resonance Imaging at Zurich University Hospital, and Professor and Chairman of the Diagnostic and Interventional Radiology: Department at University Hospital Essen, Germany.

Since 2003, he has served as Professor, Medical Director and CEO at the University Medical Center in Hamburg-Eppendorf (UKE). As a recognized hospital management expert and strategist, under his leadership the UKE has developed several innovative approaches to increasing medical quality, scientific performance, and profitability.

Radiologists are becoming diagnosticians

Rapid advances in medicine and technology have led to a change in the job description for radiologists. With image acquisition and evaluation increasingly being carried out by machines, there is a need to find new fields of activity. But the required re-think is happening far more slowly than the pace of development in science and technology, according to radiologist and healthcare management expert Professor Jörg Debätin. The professor is the first speaker in the opening session of this year’s Hospital Management Symposium, ‘Radiology in Turf Battles’, which is organized by ECR 2011 in cooperation with European Hospital.

Questions in a European Hospital interview on the increasing shift towards medicine as a service and what such a service will look like. Prof. Debätin said, “Basically this is about looking at medicine from the patient’s point of view. The patient is not interested in the label on the doc- tor’s coat describing their specialty, but whether or not that doctor is competent.” At the same time, we need to understand that the medicine of the future will no longer proceed according to set patterns. “This means it will become more individualized. No course of disease is ever exactly the same. The causes for this lie in the heterogeneity of biology. At the moment we can only guess these differences in cell development by beginning to identify the genetic profiles of different tumours. All these aspects taken together mean that, in future, medicine will have to be organised in a different way.”

European Hospital: Will payment structures also have to be adapted?

Jörg Debätin: Yes of course. Whatever creates added value will be paid for. Priorities will change accordingly. The diagnostic process will no longer be divided into imaging and non-imaging, but there is a growing need and necessity to link laboratory diagnostics, genetics and imaging with one another. For the radiologist this means that he has to deal more with the context, i.e. with the diseases and their individual characteristics, and with possible therapies.

EH: How does this change affect a radiologist’s daily routine?

JD: The former core business of the radiologist, i.e. image diagnosis, loses its relevance. These days, it’s not only image acquisition that’s taken care of by technology but also increasingly the interpretation of images, which is carried out automatically. However, a comprehensive look at all diagnostic data, of which imaging is certainly a significant part, is of great relevance. The challenge will no longer lie in locating a tumour on the image but to integrate the image data with other data, and then to make an individualised therapy recommendation. I think, in future, there will be a differentiation between diagnoses, which ends with an individualised therapy recommendation and planning, and, on the other hand, further therapeutic implementation and care. This will be the case for examinations of all types of organs. It will become important for radiologists to define themselves more as diagnostic and less as imaging providers.

EH: How is the political world following this model?

JD: German hospitals are paid for the delivery of a complete service. Admittedly, this is not yet linked to the quality of results, but development is increasingly heading in that direction. Lump-sum contracts are entered into that oblige the service providers to care for patients over a certain period of time. Within this model there is no room for people who do not provide added value. Even today, although an oncologist may read a radiologist’s report on the development of a tumour, he is likely to double check the tumour size himself because he doesn’t trust the radiological data. All these aspects taken together mean that, in future, medicine will have to be organised in a different way.”

EH: In what case, what skills does a radiologist need?

JD: The actual intellectual challenge for the future radiologist must be in integrating the volume of available data and assembling it into an overall diagnostic picture. The radiologist is predestined for this. More than any other hospital specialist, the radiologist is used to dealing with different departments. Therefore he is much better trained in interdisciplinary cooperation than doctors specialising in laboratory work, for example. The radiologist communicates with doctors as well as patients. Being able to process large volumes of data quickly, working in an interdisciplinary manner and then explaining results to patients in a comprehensible way - this is where the big opportunity for future radiology lies.

EH: Why is the self-image of radiologists often so different?

JD: Changes are never easy. But radiologists also don’t want a de-intellectualisation of their field. It’s pointless to train someone to become a doc- tor for six years, and then take five years to special- isate as a radiologist if, in the end, they’re just stuck behind two screens. Diagnostic radiologists should not, and will not, volunteer to be pushed into such a corner. It is in the interests of sustain- able radiology to achieve a re-think before it is too late.

14.00-14.15 Welcome address and introduction

Prof. Yves Menu
ECR 2011 Congress President

Friday, March 4, 2011
TECHNOLOGY FOCUS
ECR TODAY 2011
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The Future of Radiology

presented and organised by ECR 2011

hospital Management Symposium

ECR 2011: the future of radiology

Although challenged by turf battles and a lack of young radiologists, the prospects for molecular imaging are bright.

14.15-15.30 Session 1

Challenges: Radiology in turf battles

Hospital Management

Prof. Jörg Debätin
Medical Director and CEO, University Clinic Hamburg-Eppendorf, Hamburg/DE

Radiology

Prof. Philipp Grienzer
Chairman of the Department of Diagnostic and Interventional Radiology, University Hospital, Essen, Germany

Prof. Moscha Graf
Director of the Department of Imaging, Faculty of Medicine, Technical University, Aachen/DE

Prof. Clemens Cyran
Head of the Department of Diagnostic and Interventional Radiology, University Hospital, Geneva/CH

Industry

Peter Reimer
Vice President, Global Marketing Imaging Systems, Philips Healthcare, Andover, MA/US

15.30-16.45 Session 2

Concerns: What can be done about the lack of young radiologists in Europe?

Hospital Management

Dr. Heinz Broich
Medical Director and Managing Director, AKS, Luz/AT

Radiology

Prof. Jarl Jakobsson (MHA)
Consultant Radiologist, Department of Radiology and Nuclear Medicine, Skane University Hospital, Malmö/Sweden

Prof. Malgorzata Szczepanowska-Jacobsen
Professor of Radiology, Head of the Department of Interventional Radiology, University Medical School, Lund/Sweden

Industry

Dr. Michael Friebe
Medical Physicist and Managing Director, Alliance Medical, Northen and Central Europe, Richmond/DE

17.00-18.30 Session 3

Prospects: Radiology is on a most advanced pathway in molecular imaging

Radiology

Prof. Nicolas Griez
Head of the Department of Radiology and Nuclear Medicine, University Hospital, Geneva/CH

Prof. Fabian Kassing
Chair of the Department of Experimental Molecular Imaging, University of Aachen (RWTH), Aachen/DE

myESR.org
Philippe A. Grenier is Professor and Chairman of Radiology (General Diagnosis) and heads the Medical Board at Pitié-Salpêtrière Hospital, at the Pierre & Marie Curie University in Paris, France.

From 1987 to 1992 he trained at the School of Medicine, University of Paris, followed by a residency in diagnostic radiology at the Assistance Publique - Hôpitaux de Paris. After gaining the French Board of Radiology certification, between 1979 and 1982 he was a Fellow at the Radiology Department in Hôpital Broussais, Faculté de Médecine Xavier Bichat, Université Paris VIII, where he was later appointed Associate Professor of Radiology. He then became Professor of Radiology at the Faculté de Médecine de Bobigny, Université Paris XIII, before taking his current role in 1989.

He has directed the Training Committee of Residency in Radiology, been Vice-President of the Pierre-et-Marie Curie University, and is a Member of the Board of the Medical School Pierre et Marie Curie (Paris VI), and Director of the Medical Board at Pitié-Salpêtrière Hospital.

Prof. Grenier was a founding member of the European Society of Thoracic Imaging and member of leading societies, such as the European Society of Radiology, and the International Society of Strategic Studies in Radiology. Prof. Grenier has served as President, Chair and General Secretary of many radiological societies, served on the ECR Executive Committee from 1997 to 2003, and was ECR Congress President in 2002. Since 2009, he has also chaired the International Advisory Board of the RSNA.

His main interests are in chest imaging, lung cancer, interstitial lung disease, asbestosis, COPD and asbestosis, on which he has produced many notable scientific publications. He serves on the editorial boards of European Radiology, Academic Radiology, and Journal of Thoracic Imaging, is on the Advisory Board of Acta Radiologica, and has also authored numerous peer reviews, book chapters and books, and presented 135 guest lectures.

How to beat the shortage of young radiologists

Turf battles for imaging occur for several reasons: 1) Medical imaging has become essential to diagnosis, treatment planning and patient follow-up. 2) Interventional radiology provides efficient procedures that are credible alternatives to surgery, which offers a challenge to surgeons. 3) Radiologists are currently facing an explosion in demand and, paradoxically, a simultaneous drop in human resources. 4) Radiologists do not have control of patients.

5) As their interests are driven by the market, equipment companies advocate purchase of imaging equipment for clinicians.

I recommend taking the following steps:

1) The radiology department must ensure service 24 hours a day for 365 days a year and demonstrate efficiency, quality assurance and patient safety. An increase in productivity may convince the administrative director not to fragment and multiply imaging equipment in clinical departments.

2) Ensure competence of all staff radiologists in emergency radiology; develop radiology subspecialties; and participate in all multidisciplinary conferences.

3) Forge an alliance with clinicians who have no interest in engaging in a battle against radiologists, and keep a strong position on the hospital’s Executive Board.

4) Refuse clinicians any imaging in training techniques and promote studies that compare the performance of radiologists and clinicians in interpreting imaging examinations.

5) Produce recommendations in training requirements of a high level in specific fields of radiology to discourage clinicians from getting through.

6) Keep making progress in the science and knowledge of new emerging imaging techniques or modalities. Today’s research is tomorrow’s clinical practice!

Moshe Graif, Professor of Radiology and Medical Imaging and a Member of the Education Board at the Sackler Medical Faculty at Tel Aviv University, Israel, is also Chairman of the Department of Medical Imaging (Radiology) at the Tel Aviv Ichilov-Sourasky Medical Centre in Tel Aviv, Israel; Chairman of the Israel Radiological Association (ISRA); a Member of the Scientific Council of the Israel Medical Association (IMA) and Member of the National Council of Medical Imaging for the Ministry of Health.

Highly active in research, he has received 24 grants, published 106 medical articles, and been cited in medical literature 1,400 times. His editorial activities include being area editor (Musculoskeletal) of the Journal of Clinical Ultrasound, reviewer for JCU, European Radiology, IMAI, Israel Journal of Medical Science, Haifa/Radiology, a general reviewer for the Israel Academy of Science, and Chief Scientist at the Ministry of Health. Internationally, he has been, and is, a notable contributor to radiology congresses, attending more than 70 international and national meetings as chairman, presenter or co-author. These include the European Congress of Radiology as a member of the International Relations Committee.

In education Prof. Graif has served as Adjunct Associate Professor at the Department of Radiology, Thomas Jefferson University Hospital, Philadelphia, USA, and Visiting Professor at the Department of Radiology, St Paul’s Hospital, UBC, Vancouver, Canada and at the Department of Radiology in the Italian Hospital in Buenos Aires, Argentina, which is affiliated to BA University.

Steps to cope with ‘turf war’

Turf is a subtractive activity based on a variety of economic and prestigious interests. It is opposed to the trend in modern medicine towards harmonisation, ordinate formation and QA processes. Usually, ‘highjackers’ services are characterized by uncontrolled training processes, the absence of an official syllabus, no board exams, a lack of formal (registered) practice supervision and inadequate maintenance of skills due to the lack of CME and accreditation procedures – not to mention the ethical problems resulting from self referral and the frequent abuse it generates.

Allowing non-radiologists to ‘pick the cherries’ off a discipline might cripple it and create a situation where no one will be ready to provide the remaining, less attractive, services. Therefore, the provision of a satisfactory continuous service (avoiding a ‘vacuum’) and super-specialised training and accreditation programmes are some of the necessary steps to cope with such trends. Radiologists should also focus on enhancing the personal contact with patients that has been significantly reduced in the last decade. Yet, radiologists should be aware that certain conditions, such as a professional vacuum and overlap of territorial borders, can also generate turf issues. A convergence approach, consisting of joint teams that bridge sub-specialties, may prove constructive in overlap situations. Finally, the containment of technology and consumption by implementing the regulation of needs and decisions supporting (pre-authorisation) centres, which is becoming more popular, will probably be helpful in reducing both inappropriate exams and inappropriate performances.

8th Hospital Management Symposium

The Future of Radiology

presented and organised by ECR 2011 and European Hospital

myESR.org
at ECR 2011: the future of radiology

Dr. Heinz Brock was born in Bludenz, Austria, in 1953. He studied medicine at the University of Innsbruck, Austria, where he received his MD in 1980. He then took his residency in anaesthesiology and intensive care at the General Hospital (AKH) Linz, Upper Austria, where he became Head of the Department of Anaesthesiology and Intensive Care in 1989. In addition, Dr. Brock completed academic training as a hospital manager at the University of Economics Vienna and is a certified quality manager. Since 2002 he has been Medical Director and Managing Director of the AKH Linz.

In January 2010 Dr. Peter Reimer was appointed Vice President of Global Marketing of Imaging Systems at Philips Healthcare in Andover, Massachusetts (MA), where he is responsible for the Imaging Systems business group (MRI, CT, Diagnostic X-ray, Interventional X-ray, Ultrasound, Women’s Health, and Nuclear Medicine). In 1996, after gaining an engineering diploma in Biomedical Engineering at the University of Applied Science in Lübeck, Germany, Dr. Reimer became a research engineer at the Medical University Lübeck, until 2000, when he gained his doctorate at the Technical University Clausthal in Clausthal Zellerfeld.

Following three years of sales and marketing assignments from Driger Medical, the company appointed him head of its Business Management 100.Analoeuse division in Lübeck. He then joined Philips Healthcare as Vice President of Global Marketing of General X-ray, in Hamburg, covering the entire GXR business at three sites (Hamburg, Boe, China). Philips then appointed him as Vice President of Global Marketing of Computed Tomography. Based in Cleveland, Ohio, Dr. Reimer was responsible for global upstream and downstream marketing (Product management, Clinical Science, Field Marketing, MarCom, Strategy) for the entire CT business at three sites (Cleveland, Hatia and China), before taking on his current role.

What can be done about the lack of young radiologists in Europe? Radiologists play an important part in the majority of diagnostic and therapeutic procedures. For that reason, staff shortages in radiology departments severely compromise the quality of clinical processes. However, the shortage is not evident in absolute terms, as the number of radiologists is increasing in most European countries. On the other hand, the rapid progress of imaging techniques boosts the demand for specialised radiologists to an even greater extent. In order to close the gap between the currently available human resources and the manpower needed for high-quality radiology services, appropriate action has to be taken at different management levels.

At the level of every single department process, management is the first-line measure to enhance productivity without increasing workload. Teleradiology might provide an opportunity for innovative working environments in the future. National societies should assume responsibility for the attractiveness of their specialty to young physicians. Training programmes and career options are the most powerful criteria when choosing an occupation. Last but not least we need a clear strategy in health policy. As long as healthcare reforms focus on cutting costs instead of evaluating benefits the medical profession will lose its fascination.

What we need to do to attract young radiologists is not the same as what we need to do to retain them. We need to improve the job’s attractiveness to enhance recruitment. The demand for radiology procedures, even on a 24/7/365 basis, seems to be increasing faster than the number of new radiologists. The shortage of radiologists creates a service provider gap. Furthermore, quality, safety, education, and research are threatened.

Generation X is now entering radiology. Their preferences for and requirements from the job may be different than those experienced by today’s Heads of Departments. Thus, recruiting requires an open-minded dialogue and understanding of who the applicants are and what kind of lives they will live. Positive rumours about the department enhance recruitment. Rumours are spread on compul- sory courses, at conferences, in alumni, on social media (internet), when residents leave us, etc. To us, recruiting good radiologists has been very easy during the last ten years and we believe our reputation is a strong contributing factor.

Many factors may retain young radiologists – for example, possibilities to participate in academic activities, to have some autonomy in organising their working week (e.g. the use of teleradiology from home, and on-call structures adapted to modern family life) and opportunities to specialise. The working environment is also important. Leaders might have to choose between preserving the status quo and accepting new structures. However, most adaptations are cheaper than being a bottleneck in the hospital, or having to start new recruitment. In the future we will meet new challenges, but competitive leadership will still be required when young radiologists have to be recruited.
Diagnostic Imaging

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Satellite Symposia Program

Friday, March 4, 12:30 – 13:30, Room D1
Advances in Contrast Enhanced MRI – Efficacy, Safety and Applications
Chairman: M. Law, Los Angeles, CA/USA

Saturday, March 5, 12:30 – 13:30, Room B
Synergies in CT – For Better Patient Care
Chairman: J. E. Wildberger, Maastricht/NL

Lunch will be provided

We are looking forward to meeting you
Visit us at Extension Expo A

www.diagnostic-imaging.bayerscheringpharma.de
Another busy and successful year for the European Institute for Biomedical Imaging Research

By Gabriel Krestin,
Chair of EIBIR General Meeting,
EIBIR Scientific Director

EIBIR is currently revising its member database and online members’ area in order to reflect the different categories of service packages. In doing so, the functionality of the database will be improved and some additional fields related to site capabilities will be added in order to ensure a comprehensive and up-to-date database to facilitate the setting up of new initiatives and the building of a consortia for upcoming projects. In fact, our analysis shows that the database is consulted frequently and scientifically and industrially partners of the Network are using it on a regular basis.

The Scientific Advisory Board was newly composed last year with the aim of generating a proactive body that determines the scientific strategies of the coming year. The new board has reviewed a number of Network Member requests for support in grant proposal writing, offered support to European applicants for the RSNA seed grant programme, and has held an electronic meeting to discuss priorities and initiatives for the coming year.

The European Society of Radiology (ESR) has again provided significant financial support to EIBIR with a contribution of about EUR 150,000 to complement the support provided by the EIBIR Industry Panel members, all of which we gratefully acknowledge. This has allowed us to invest in new projects, in particular the planning phase of Euro-BioImaging, which has been very intense and only received funding in the planning phase of Euro-BioImaging, which has already made significant progress in evaluating potential health impacts of diagnostic imaging agent doses.

Our two FFP research projects that started in 2008, the cell image project ENIGITE and the breast cancer imaging project HAMAM, progressed well again during this year, with their second annual reports submitted to the European Commission and wide dissemination and training activities in place.

The COST Action on imaging and theranostics submitted by the EIBIR chemistry platform is currently in the final stages of evaluation and we are confident that the networking activities on this hot topic in biomedical imaging will be fruitful.

EIBIR’s experienced project staff have supported the European Society of Radiology in successfully applying for an EC Tender on radiation protection training. The tender brings together the main European stakeholders and professional groups relevant to radiation protection training in the medical field. The aim is to provide an improved implementation of the Medical Exposure Directive provisions relating to radiation protection training, and the training of medical professionals in the EU Member States.

However, the focus of EIBIR’s attention and resources has this year clearly been on Euro-BioImaging, the ESFRI research infrastructure project aiming to provide access to imaging technologies across the full scale of biological and medical applications, from molecules to patients. The project is scientifically coordinated by EIBIR (Medical Imaging) and EMBL (Biological Imaging) and its FFP preparatory phase proposal has been selected by the European Commission (EC) as best among all infrastructure projects in the biomedical sciences field. The EC-funded three-year preparatory phase started in December 2010 with the aim of developing a plan to construct and operate a set of complementary and strongly interlinked infrastructure facilities distributed throughout Europe. The infrastructure project relies on the support and participation of Europe’s biomedical imaging community.

You are encouraged to visit the project website www.eurobioimaging.eu to learn about the mission and possibilities for participation and contribution.

You are most welcome to visit the EIBIR booth here at ECR 2011 (located on the entrance level) to learn about EIBIR’s services and activities as well as to pick up your personal copy of the EIBIR Annual Report 2010!
These challenging times present opportunities for those ready to face the challenge, and so the Cardiovascular and Interventional Radiology Society of Europe (CIRSE) finds itself on the threshold of a new era of possibilities. CIRSE has been representing the European IR community for 25 years, and is now ready to make an even greater mark on the medical community. The discipline has grown steadily over the last decades, developing new techniques and refining old ones while building strong cooperative partnerships with other medical disciplines, and what has been put in motion will continue on its steady trajectory. Opportunities beckon, and we look forward to meeting the challenge.

Vascular Interventions

The development of vascular interventions laid the cornerstone for interventional radiology, and remains an important area of CIRSE’s work. Below-the-knee interventions in particular are experiencing increasing demand, in light of the growing number of diabetics who are at high risk of vascular occlusion in the lower legs. According to the WHO, the UN and the World Bank, diabetes is set to reach pandemic levels in the near future, mainly due to poor lifestyle choices. Between 1985 and 2007, the incidence of diabetes rose from 30 million to 246 million, and is estimated to skyrocket to 380 million by 2025. Amongst other dangers, diabetics are at significantly higher risk of lower limb amputation, as vascular damage caused by excessively high blood sugar levels commonly affects peripheral areas such as the feet. The American Diabetes Association estimated that in 2002, the U.S. economy lost $39.8 billion due to lost work days, mortality and permanent disability.

Interventional radiology can help these patients, as lower limb revascularisation can help avoid or minimise the degree of amputation, being better for patient, health payer and society. In preserving physical integrity, IR offers patients independence and better quality of life, and CIRSE looks forward to supporting this valuable work.

Interventional Oncology

Interventional radiology has evolved greatly since its initial vascular focus, and now covers many diverse areas, not least of which is the recently emerging subspecialty of interventional oncology. IR has long been offering cancer patients palliative treatments for their conditions, with drainage and tumour-shrinking procedures relieving the pain and discomfort felt by so many. Over the last decade, IR’s involvement has become more active, with techniques and therapies being improved and adapted to offer curative and adjuvant options such as tumour ablation, local drug delivery and non-invasive therapies such as HIFU (High-Intensity Focused Ultrasound). CIRSE is proud to support and facilitate this valuable advance in oncology, and hosts Europe’s premier interventional oncology congress, the European Conference on Interventional Oncology (ECIO), a biennial meeting that will next take place in spring 2012. ECIO 2010 was a huge success, as we welcomed delegates not only from our own IR ranks, but also our colleagues from diagnostic radiology, oncology and hepatology. Interventional oncology was also showcased in our major new PR campaign – Interventional Quarter.

An IR society for IRs

CIRSE has developed significantly in recent years from a congress-based organisation to a member-focused one, which is involved in a multitude of different activities. CIRSE’s European School of Interventional Radiology (ESIR) offers dedicated training courses, as well as an easy-to-navigate website, which offers members access to a host of lecture slides, abstracts and video lectures.

CIRSE supports its members and their interests through various research, lobbying and promotional activities. Patient information brochures in several languages have been made available to members, and an IR magazine for non-IRs, Interventional Quarterly, is distributed to a wide readership. Should you wish to pick up a copy of the latest issue, or find out more about our many activities and publications, please call by the CIRSE Booth here at the ECR, or visit the websites listed below.

www.cirse.org
www.esir.org
www.interventional-quarter.org
Successful launch for the European Day of Radiology

By Melissaone Rouger

February 10, 2011, saw radiologists throughout Europe participate in an unprecedented project. Under the coordination of the European Society of Radiology (ESR), nineteen national radiological societies took part in the first European Day of Radiology (EDoR), to raise public awareness about the role of radiology in modern healthcare, with very positive results.

With this initiative, the ESR and the participating societies aim to enhance radiology’s image as an essential and progressive element of modern healthcare. “Our aim is to raise public awareness of the increasing importance of radiology in every field of medicine, from both a diagnostic and a therapeutic point of view,” said ESR Communication & International Relations Committee Chairman Professor Luigi Solbiati, from Busto Arsizio, Italy.

ESR President Professor Maximilian Bierer, from Munich, made it clear that public awareness was a top priority on his agenda when he took office in March 2010. “It is most important that radiology is recognised as a clinical discipline by the public. Many patients think that a radiologist is a technician who is not really involved in patient care,” he said.

The world of radiology is often something of an enigma to the general public. Although many procedures are well known by name, and the impact that a single routine examination can have on a patient’s life can be life-altering, many procedures are well known by name, and unsung hero among the general public. Although radiation risks are not realistically perceived, we have made major efforts to reduce radiation exposure, but it remains an emotional issue, and radiologists should be able to explain radiation protection. The public should also be educated to realistically assess the risks and the risk-benefit ratio,” the ESR President explained.

The national radiological societies of Austria, Belgium, Croatia, the Czech Republic, France, Georgia, Hungary, Ireland, Italy, Lithuania, the Netherlands, Poland, Portugal, Romania, Spain, Sweden, Switzerland, Turkey and the U.K. all joined the initiative.

Some societies even chose to organise various events held on or around February 10. The Romanian Radiological Society organised a very comprehensive press conference covering not only EDoR topics but also other European projects such as the Alliance for MRI and the activities of the Italian Society of Radiology in Europe.

Most participating societies invited journalists to press conferences or to visit hospitals, and many secured special cooperation with the media. News conferences and/or TV interviews were given in Ankara, Brussels, Bucharest, Budapest, Paris, Rome, Vienna, Vilnius, and Warsaw. The high attendance at press conferences and large presence in the media on or around February 10 all around Europe might translate into a renewed action next year.

The date February 10 marks the anniversary of the death of Wilhelm Conrad Röntgen, who first discovered X-rays in 1895. This particular day was chosen for the European Day of Radiology to draw a link between the beginnings of radiology and its current status, as to highlight the progress made, as much as to honour the life of the man who made the very first steps in founding the discipline. Wilhelm Conrad Röntgen received the Nobel Prize in Physics in 1901 for his discovery and, significantly, refused to take out patents, intending the practical applications of X-rays to benefit mankind to the greatest possible extent. He did not even want his discovery to bear his name. Long after his passing he is still undoubtedly the most important personality in the history of radiology, having laid the foundations for the many and varied advances made in his wake.

Hopefully those advances will now be better known to the public.

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French Society of Radiology: a new breath of youth

By Myriam Edisji-Gomillon

The SFR, which represents more than 8,000 members, 10% of whom are residents or fellows, took a significant step toward involving its young population in 2008, thanks to Prof. Jean-Claude Leandri, who convinced the SFR Junior (French Junior Society of Radiology): Hand in hand with our mentors, the SFR Junior intends to help young radiologists reach a level of knowledge and skill to work as professionals while respecting the Hippocratic Oath. It has a strong commitment to ensuring that residents and fellows acquire knowledge by encouraging their curiosity, sharpening their research skills and integrating them into the professional community.

Let me summarise three of our main accomplishments in 2010.

Promoting access to research

Not only is knowledge an application and evolution of our practice. Continually securing major research funding, in collaboration with the SFR and the French RTF (Radiology Trainees Forum), the SFR Junior offers both M.S. and Ph.D. grants in radiological sciences. Fifteen young researchers have benefited from this offer, and are now working on cutting-edge topics such as SRL, magnetic resonance spectroscopy, molecular imaging, and image processing as well as other areas of imaging sciences.

We all know how difficult it is to add a research profile to long medical studies and to the development of a personal life. Support from our peers and mentors, help in the form of funding, and promotion of good work is the best way to encourage young radiologists to fulfill these expectations. We will continue to work with the industry partnerships to promote research radiologists in order to increase the number of grants offered.

Being involved in our professional debates and national policy discussions

This year at particular has been rich in debates concerning the demographic evolution of the number of radiologists in training. An important modification of the French residency is in progress, and we worked within the federal delegation of radiology as well as the French Health Ministry on this subject.

We mainly emphasised the growing need to increase the number of radiologists in training to reach a correct demographic equilibrium. We promoted the ESR curriculum, known as the 3+2 years of training for the residency.

At the European level would be the cornerstones to establishing fruitful and durable collaborations. In this context, the SFR Junior is here to provide you with information on those exchange possibilities to and from France. Each year, the French Society of Radiology offers a special grant (Jacques Sauvagier) for young radiologists to come and assist the Congress of Radiology. We are very pleased each year to welcome the participants to Paris.

This year, another way to meet the SFR and the SFR Junior is to come and see us in Vienna, here at ECR 2011, with Prof. Yves Menu, ECR 2011 President. The French Society of Radiology offers a special grant (Jacques Sauvagier) for young radiologists to come and assist the Congress of Radiology.

We are very pleased each year to welcome the participants to Paris.
Why to submit, how to become an author, and how to benefit from what EPOS™ offers

By Lisa Losbl

EPOS™ is the ESR’s Electronic Presentation Online System. It was introduced in 2003 to replace the traditional paper posters and has since grown into one of the ESR’s largest and most popular online resources. The EPOS™ database is accessible throughout the year and contains more than 11,700 electronic presentations.

EPOS™ offers authors a platform where their work can be made available to the scientific community quickly and efficiently – the shortest possible time between abstract submission and poster publication amounting to about 20 days.

ECR Today spoke to José I. Bilbao, chairman of the scientific exhibition, about EPOS™, the idea behind it, and recommendations for submitters.

ECR Today: What are important considerations for preparing a good poster?

José I. Bilbao: The main goal of EPOS™ is to offer a wide variety of quality proven work in our field in an attractive format. EPOS™ presentations, which are much shorter than scientific articles and therefore more easily accessible, provide a vast base of knowledge that is available all year long. Because of these characteristics, EPOS™ also functions as a great learning tool and is of specific value to our young researchers. If the author believes that he/she has something to share with others and would like to reach a wider audience and have the work published quickly, EPOS™ is an excellent platform.

ECRT: Do you have any specific concern?

JIB: When assessing an abstract, reviewers are looking for an interesting or novel answer to a specific concern. Thus the content should not only have scientific quality but also be presented in a novel way. The title should be carefully evaluated and the authors should make it attractive, solid and novel. If the author is not a native English speaker, proofreading is recommended. If the writing is poor with frequent errors it will not make a good impression on reviewers and may even obscure good research.

Abstracts are sent to reviewers who are chosen according to their areas of expertise and the ESR keywords representing each abstract. It is important that the authors take care to choose the categories that best represent their work, as the assignment of appropriate reviewers depends on these choices.

An abstract is much more than the summarised presentation of a scientific paper. The reviewers have to give an opinion on a brief text; so the authors should carefully analyse and choose the best way to present their work.

ECRT: What is the special focus of EPOS™ compared to other publications? When should an author’s work be presented as an EPOS™ poster?

José I. Bilbao: The main goal of EPOS™ is to offer a wide variety of quality proven work in our field in an attractive format. EPOS™ presentations, which are much shorter than scientific articles and therefore more easily accessible, provide a vast base of knowledge that is available all year long.

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ECRT: What are important considerations for preparing a good poster?

JIB: A good poster should be prepared with attention and effort. Mistakes or poor references should not be accepted. The figures and quotations should be adequate, containing the necessary legends (arrows, etc.). The material and methods section should be presented in detail since the aim is to help others do the same in order to obtain the same results. The discussion, and comparison with other series, should be done carefully.

Journal articles are evaluated in their final form while EPOS™ posters do not receive such a revision – it is the abstract that is accepted. The authors have to be aware of this responsibility. It is also important that the authors are aware that they belong to a larger group (hospital, university, etc.) and, to a certain extent, they represent their institution. A bad poster does not provide a good image of the represented institution.

ECRT: Are there topics for which you would like to specifically encourage submissions?

JIB: In my opinion, it is enriching to present and discuss specific professional matters that affect different centres or nations. Scientific societies look for homogeneity among educational programs, titles and protocols. In order to learn more and understand where to pay attention, one has to be informed.

ECRT: What are the long-term goals for EPOS™?

JIB: EPOS™ should fulfill two objectives. On the one hand, it is clear that it is a tool for scientific and educational presentation at the ECR but, on the other hand, it is a very large database that should be used habitually by radiologists. When someone is studying, preparing a talk or a class, or simply making a report, he should be able to have all the ESR e-tools available. By using a single tool – EPOS™ – the radiologist could have access to all the required information. This reflects the great service that the ESR is offering in the diffusion of knowledge.

EPOS™ Area & Lounge / EPOS™ Discussions

EPOS™ (the Electronic Presentation Online System) will again – as for ECR 2010 – feature a dedicated lounge, up on the second floor of the congress venue, in Foyer A. The idea is to create a more suitable atmosphere for studying its nearly 3,000 posters in peace, with a more open library ambiance, but still allowing ample space for discussion and exchange.

Opening Hours

Thursday, March 3:
14:00–18:00
Friday, March 4 to Sunday, March 6:
08:00–18:00
Monday, March 7:
13:30–18:00

To enhance interaction, discussions on hot topics in radiology have been arranged, where authors of the highest-scored posters in each field will discuss them with a moderator. ECR delegates are welcome to join, listen, and discuss with the experts. The five discussion rounds will be:

- **Friday, March 4, 10:00–10:30**
  Imaging perfusion for the prediction of treatment outcome
  **Moderator:** A. Trojanowska; Lublin/PL

- **Friday, March 4, 13:30–14:00**
  Whole body MRI
  **Moderator:** E. de Kerviler; Paris/FR

- **Friday, March 4, 15:30–16:00**
  New MR Biomarkers
  **Moderator:** L. Martinez-Bravo; Valencia/ES

- **Saturday, March 5, 13:30–14:00**
  Liver Intervention
  **Moderator:** J.I. Bilbao; Pamplona/ES

- **Saturday, March 5, 15:00–16:00**
  Dose in CT
  **Moderator:** K. Nikolov; Munich/DE

Please visit www.myESR.org/EPOS!

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The European School of Radiology (ESOR) is an established and growing initiative of the European Society of Radiology (ESOR) in the field of education. One of its main goals is to assist in the promotion of radiological education in Europe. With its wide range of activities ESOR aims to raise standards in the field of scientific radiology, to extend and coordinate teaching resources worldwide and to help young radiologists to achieve the knowledge and skills to fulfil tomorrow’s requirements. The activities of ESOR encompass student visits, visiting seminars, visiting schools, exchange programmes, etc.

### ESOR Awards

On the occasion of the seminar, scholars and fellows will be awarded certificates for successfully completing the 2010 Visiting Scholarship Programmes and Exchange Programmes for Fellowships.

### Visiting Scholarship Programme 2010

The Visiting Scholarship Programme is one of the most popular programmes among residents in radiology, offering the chance to stimulate interest in a chosen field of radiology. In 2010, thirty scholars completed three months of training at highly esteemed reference centres throughout Europe, supported by grants from Bracco and the ESOR. Two scholars were given the unique opportunity to do their training at the Memorial Sloan-Kettering Cancer Center in New York!

### Congratulations!

Thirty scholars completed three months of training in radiology, offering the chance to stimulate interest in a chosen field of radiology. In 2010, thirty trainees successfully completed their training. Congratulations!

Ahmed Abdelwahab
Ain Shams University Hospital/Egypt

Topic: Neuroradiology
Training centre: Royal Hallamshire Hospital, Sheffield/United Kingdom

Ben Arief
Hammersmith Hospital, London/United Kingdom

Topic: Cardiac Imaging
Training centre: University Medical Centre, Leiden/The Netherlands

Despine Bibileishvili
Research Institute of Clinical Medicine, Tbilisi/Georgia

Topic: Breast Imaging
Training centre: breast imaging training, University Hospital of Geneva, Geneva/Switzerland

Patricia Carreno Moran
Training centre: Hospital Vall d’Hebron, Barcelona/Spain

Laia D’Enrico
University Hospital San Juan de Alicante, Spain

Topic: Cardiac Imaging
Training centre: University of Barcelona, Spain

Rana Mehren
Medical College/Babylon University, Egypt

Topic: Abdominal Imaging
Training centre: University Hospital Maastricht, Maastricht/Netherlands

Leyla Musayeva
N.N. Blokhin Russian Cancer Research Centre, Moscow/Russian Federation

Topic: Oncologic Imaging
Training centre: Memorial Sloan-Kettering Cancer Centre, New York, USA

Marius Mayerhöfer
University Medical Centre Utrecht, Utrecht/Netherlands

Topic: Oncologic Imaging
Training centre: Hôpital Erasme, Brussels/Belgium

Mirta Visovic
Clinical Centre Nis, Nis/Serbia

Topic: Abdominal Imaging
Training centre: Clinical Centre Nis, Nis/Serbia

Maia Uusväli
West-Tallinn Central Hospital, Tallinn/Estonia

Topic: Neuroradiology
Training centre: Hôpital de Basurto, Bilbao/Spain

Katherine van der Mark
University Hospital, Queen Elizabeth Hospital, Birmingham/United Kingdom

Topic: Breast Imaging
Training centre: University Hospital Leuven, Leuven/Belgium

Nina Shiskina
N. B. Khokhin Russian Cancer Research Centre, Moscow/Russian Federation

Topic: Oncologic Imaging
Training centre: Memorial Sloan-Kettering Cancer Centre, New York, USA

### Education in radiology

The European Society of Radiology (ESOR) in action

- **Introduction**
  - M. F. Reiser; Munich/DE

- **ESOR in action**
  - N. Sartorijanac; Zagreb/Croatia

- **Teach the teachers**
  - H. Cameron; Edinburgh/UK

- **Widening the vision of teaching**
  - S. Golding; Oxford/UK

- **Tutoring in radiology**
  - C. Loane; Vienna, Austria
The ESR's EU Taskforce, established in 2009, monitors and analyses a wide range of EU policy and legislative developments that have implications for the radiology profession. The EU Taskforce is headed by the ESR Past President and is supported by the Department of EU and Public Affairs at the ESR Office in Vienna.

A dedicated section of the ESR website keeps ESR members up to date on European affairs and offers a range of opportunities to engage with EU affairs and to get involved in the ESR work.

The Taskforce aims to secure a European policy framework that supports the ESR’s mission to serve the healthcare needs of the general public through the support of science, teaching, research, and quality service in the field of radiology. The Taskforce is therefore engaged in constant dialogue with the European institutions as well as policymakers at the national level, and is dedicated to pushing forward the European agenda for radiology. It fosters associations in the fields of research, regulatory affairs and education.

Below you will find an overview of the most important policy areas the ESR is currently involved in, or planning to engage in, to ensure a favourable development of medical imaging in the best interest of Europe's patients.

A European campaign that has required a very high level of commitment and stamina over the past few years has been the Alliance for MRI, established in 2007 to avert the threat posed to MRI by the EU Physical Agents 2004/40/EC Directive. Although the European Commission proposed an exemption for MRI in 2007, this was not included in, or planning to engage in, to ensure a favourable development of medical imaging in the best interest of Europe's patients.

In the course of that process, different scenarios were accounted for in the current legal documents. Technologies present new challenges that are not accounted for in the current legal documents. The European Commission is now aware of the complexity of these beneficial provisions were excluded in the adopted version of the Directive. The directive is primarily focused on ensuring that patients from one country within the EU may obtain healthcare within another EU country without hindrance. The main emphasis of the directive is to make it easier for patients to obtain approval for organised financial framework to be put in place to pay for the healthcare.

Sunday's edition of ECR Today will feature an article on eHealth in the European legislative content.

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By Monika Hierath

The ESR is proud to present a new interactive tool for ECR 2011. The brand new ECR’s Interactive Programme Planner allows users to browse ECR 2011 Abstracts with the new Interactive Programme Planner. Featuring various search and browse functions for sessions as well as ‘print your own personalised Book of Abstracts’. By clicking on the ‘print your own personalised Book of Abstracts’ option, you can collate items from the programme to create a personal calendar and even print your own personalised block of Abstracts.

Visit ipp.myESR.org (or m.myESR.org with your mobile device) and start creating your personal schedule for ECR 2011!

myESR.org

ESR’s stakeholder engagement at European level gains importance

By Monika Hierath

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myESR.org

ESR’s stakeholder engagement at European level gains importance

The European level gains importance

The ESR’s stakeholder engagement at clinical applications of MRI is far from won. It represents a huge step in the right direction, the battle for the future of research and the Directive.

The European Commission proposal for a Directive on patients’ rights in cross-border healthcare has been a key focus of the taskforce. The European Commission is now aware of the complexity of the Directive.

The ESR is also closely monitoring the recast of the Medical Devices Directive (2005/36/EC) and remains committed to ensuring that patients from one country within the EU may obtain healthcare within another EU country without hindrance.

The ESR is represented in the European Medical Devices Alliance, a stakeholder forum that is currently being formalised in order to provide expert opinions and advice to the Agency.

In close cooperation with the ESR Education and Professional Organisations Committees, the Taskforce is preparing a response to the European Commission consultation on the professional qualifications Directive. The public consultation is aimed at gathering stakeholders’ views on a modernisation of the Professional Qualifications Directive.

The ESR is represented in the European Medicines Agency’s Healthcare Professionals Working Group by a stakeholder forum that is currently being formalised in order to provide expert opinions and advice to the Agency.

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ESUR promotes new standards in genitourinary imaging

By Gertrud Heinze-Peer, Vienna, ESUR President

‘Panta rhei,’ meaning ‘everything flows,’ is a famous phrase from Simplicius, and often misattributed to Heraclitus (544–483BC) since it characterises his concept. Certainly this quotation remains true today for the subspecialty of genitourinary imaging, which like all areas of diagnostic and interventional radiology has seen relentless technological innovation herald new developments and raise new imaging-related challenges.

From a diagnostic perspective, most recent challenging topical issues for ESUR relate to female pelvic imaging, CT and MR angiography (CTU, MRA), as well as prostate imaging.

The ESUR Female Pelvic Imaging Group published guidelines entitled ‘Characterisation of Ovarian Masses’ in 2009 and guidelines on imaging of the infantile and indeterminate adrenal masses: an algorithmic approach as well as re-evaluation of endometrial carcinoma in 2010. Additional guidelines on cervical cancer and ovarian cancer are being finalised and will be published this year.

The CTU and MRA techniques have now been introduced widely throughout Europe and are currently used for various clinical indications. The ESUR CTU and MRA working group published guidelines on CT angiography definitions, indications and techniques. A guideline for clinical practice in 2010. The role of CTU in the evaluation of hematuria continues to be debated between urologists and radiologists. However our colleagues increasingly appreciate these techniques.

Imaging of prostate cancer remains a great challenge. ESUR has established a new working group on Prostate Cancer Imaging. A guideline for MR imaging of the prostate will be finalised in 2011.

Special attention has always been given to contrast media research and the safety aspects of these agents. The Society’s Contrast Media Safety Committee has published more than 20 important guidelines, of all of those, including the latest version 7.0, are freely available on our website.

Translations of the English CMS guidelines are now available in 9 languages: German, Greek, French, Hungarian, Italian, Japanese, Polish, Russian and Turkish, and translations into Serbian-Croatian, Chinese, Hindi, and Arabic are in preparation.

ESUR believes that strong clinical-radiological cooperation is of vital importance in modern medical practice and has established a Paediatric Working Group that has built strong scientific links with the ESFR (European Society of Paediatric Radiology). Recently, the ESFR uroradiology task force and ESUR Paediatric Working Group published ‘Imaging and procedural recommendations in paediatric uroradiology; part 1’. Further publications of the Paediatric Working Group include ‘Imaging recommendations in paediatric uroradiology’ and ‘Imaging recommendations in paediatric uroradiology: minutes of the ESUR workshop session on urinary tract infection, fetal hydronephrosis, urinary tract ultrasoundography and voiding cystourethrography’. All these recommendations are freely available on our website.

Joint meeting with SUR and their merger with SICR

ESUR has always closely cooperated with the Society of Uroradiology (SUR). We are fortunate to experience excellent scientific exchange and enjoy a good friendship with SUR colleagues at our biannual joint meetings. Next time we will meet in Dubrovnik, Croatia, on October 13–16, 2011. Recently, the SUR has merged with the Society of Gastrointestinal Radiology (SGR). SAB, the Society of Abdominal Radiology, will be the new identification of the merged society.

Supported by ESUR, the European School of Radiology (ESOR) organised a Galen course focusing on urogential radiology, held on June 17–19, 2010 in Tallinn, Estonia. Another one will be held in Barcelona, Spain, April 28–30, 2011.

Global Education Programme on Contrast Media

In 2010, ESUR launched a global education programme on state-of-the-art use of contrast media in different countries and thus promote the safe use of these agents and avoid adverse effects. Leading radiologists from Turkey, Kazakhstan, Russia, Poland, and Romania participated at our first global education meeting on the safe use of contrast media in Istanbul on May 1, 2010.

Since then, education on the safe use of contrast media has been further promoted under ESUR patrimony at local radiological meetings in these countries. Recently, another very successful ESUR global education meeting with participants from Hungary, the Czech Republic, Slovakia, Serbia, Republica Italiana and the Federation of Bosnia & Herzegovina took place in Vienna on December 11, 2010. Knowledge on contrast media will be spread at local meetings in 2011 under the patrimony of ESUR. In 2011, further contrast media educational programmes will be organised in Malaysia, Taiwan, Thailand and Indonesia.

The Scientific Committee of the ESUR global education programme consists of S. Morcos (Chair, UK), G. Heinz-Peer (Austria), M.F. Bellin (France), H. Thomesen (Denmark).

Annual ESUR symposium in 2011

The annual ESUR meeting will be held in Dubrovnik, on October 13–16. The main topic will be ‘Female and renal imaging’. It will be a joint meeting with the SUR. Additionally, a joint session with our colleagues from ESGAR will cover abdominal and pelvic emergency topics.

Prostate cancer in Ghent

This teaching course, scheduled for June 3–5, 2011, in Ghent, Belgium, aims to provide practical information for radiologists who want to start or promote prostate MRI at their own institution. It will include formal state-of-the-art lectures presented by experts in the field, but also practical case studies and ample time for open discussions among participants and experts.

For further information, full programme and registration, visit www.prostatemicroursese.com

The European Society of Urogential Radiology wishes all readers a successful and invigorating 2011. Long live the dictum ‘Panta rhei!’

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Albertina
Special Exhibition: The Blue Rider

1010 Vienna, Albertinaplatz 1
Opening hours: daily 10am-6pm
Wednesday 10am-9pm
www.albertina.at
What’s on today in Vienna?

Theatre & Dance

Please note that all performances, except at Vienna’s English Theatre, are in German!

Rabenhof
1030 Vienna, Rabengasse 3
phone: +43 1 712 82 82
www.rabenhof.at

20:00 Austrofred – You can shove your magic flute up your a…

Schauspielhaus
1090 Vienna, Porzellangasse 19
phone: +43 1 512 65 01
www.schauspielhaus.at

20:30 Kreisky – wer sonst? Folge 8
by Bastian Kraft and Daniela Kranz

stadlTheater wulschlager
1010 Vienna, Wulschlagergasse 4
phone: +43 1 712 42 00
www.stadltheater.org

20:00 Karriere
by Verena Kärth based on the novel
by Robert Neumann

Tanzquartier Wien
1070 Vienna, Museumsplatz 1
phone: +43 1 581 35 91
www.tqw.at

20:30 Onde de choc
O Vertigo (Canada), choreography by Ginette Laurin, music by Michael Nyman

Theater in der Josefstadt
1080 Vienna, Josefstadter Straße 26
phone: +43 1 42 700 300
www.josefstadt.org

20:00 Drei Schwestern
by Anton Tschachow

Vienna's English Theatre
1080 Vienna, Josefsgasse 12
phone: +43 1 402 12 60 0
www.englishtheatre.at

19:30 Cat on a Hot Tin Roof
by Tennessee Williams

Concerts & Sounds

Musikverein (Classical Music)
1010 Vienna, Bösendorferstraße 12
www.musikverein.at

19:30 ORF Radio Symphonie Orchester Wien, conductor Peter Eötvös
Natalia Zagorinskaya, soprano,
Carolin Wildmann, violin
Z. Kodály, P. Eötvös, G. Kurtág, B. Bartók

Porgy & Bess (Jazz)
1010 Vienna, Riegergasse 11
www.porgy.at

20:00 Armen Donelian Quartet

Arena (Alternative Music)
1030 Vienna, Baumgasse 80
www.arena.co.at

20:00 ’Paganfest 2011’

Gasometer (Alternative Music)
BA-CA Halle Gasometer
1110 Vienna, Guggasse 8
www.gasometer.at

20:00 Beatsteaks

Szene Wien (Alternative Music)
1110 Vienna, Hauffgasse 26
www.szenewien.com

20:00 Vienna Prog Rock Night feat.
Captagon / Inspirational Corner / Terratoma

Opera & Musical Theatre

Volksoper
1090 Vienna, Währingerstraße 78
www.volksoper.at

19:00 Die Blume von Hawaii
Operetta by Paul Abraham

Wiener Staatsoper –
Vienna State Opera
1010 Vienna, Opernring 2
www.wiener-staatsoper.at

14:30 & 17:00 Die Zauberflöte (The Magic Flute) for Children
by Wolfgang Amadeus Mozart,
conducted by Franz Welser-Möst

Bairnundtheater
1060 Vienna, Wallgasse 18–20
www.musicalvienna.at

19:30 Ich war noch niemals in New York
by Udo Jürgens & Gabriel Barylli

Bonachter
1010 Vienna, Sillerstätte 9
www.musicalvienna.at

19:30 Tanz der Vampire
by Jim Steinman & Michael Kunze