How to create hand-made chocolate masterpieces isn’t your usual radiology talk but, in today’s session, radiologists with a sweet tooth can learn all about truffle making and other confectionery arts from a leading Swiss chocolatier – interpreted with more conventional talks about radiology in Switzerland.

Andreas Trumpler, managing director marketing and group CMO at Läderach chocolatier suisse, will be giving two short presentations about how Swiss chocolate is transformed from cacao bean to chocolate, and then into a hand-made masterpiece. The company employs more than 800 people and since 1962, it has established a reputation for chocolate and confectionery specialties. Läderach’s products are sold throughout Switzerland and Germany as well as by partners in the Middle East and Asia, and it supplies the top end of the gastronomy and hotel industry with semi-finished and finished products.

The connection between Swiss chocolate and Swiss radiology is one of quality, according to Prof. Dr. Dominik Weishaupt, who has been President of the Swiss Society of Radiology (SSR) since 2016 and is chairing today’s session. “Over the 100 years of the Society’s history, we have undertaken several initiatives to improve the quality of Swiss radiology. And chocolate is considered as one of the highest quality products manufactured in Switzerland,” he noted.

Weishaupt, who is chief physician in the Institute of Radiology and Nuclear Medicine at City Hospital Zurich, explained that Swiss chocolate needs precision manufacturing, and Swiss radiology also prides itself on its attention to detail. He said that the SSR was the first medical society to introduce board exams, as well as clinical audits for radiology departments in the private and public sector, which they developed in close collaboration with the Ministry of Health.

“Other radiologists outside of Switzerland will probably be very interested in how our board exams are performed,” he pointed out. “We’ve organised them in a very precise and complete way. When we do something in Switzerland, it’s usually very precise and complete.”

The board exams have both a written and an oral component. During the oral exam, radiologists are given a case to discuss and are asked questions, including some that go beyond the case itself. In board exams, you must get an impression of how the candidate

continued on page 2
Clinical necessity of gadolinium contrast comes under close scrutiny

Gadolinium-enhanced MRI scans have been the gold standard in suspected cases of benign tumour vestibular schwannoma (VS) and multiple sclerosis (MS), but given the growing evidence that the contrast agent can leave deposits in the brain, debates have ensued about how to image wisely.

E.C. Thoeny; Bern/CH

"I believe that for the diagnosis of MS, the use of a gadolinium-enhanced MRI is still highly recommended," Dr. C. W. A. Pfirrmann, pictured, told ECR Today. "There is still strong evidence for the follow-up scans is becoming less and less the rule. Instead, a gadolinium scan is requested in specific cases when imaging is needed for the follow-up scans is becoming less and less the rule. Instead, a gadolinium scan is requested in specific cases when imaging is needed for the follow-up scans is becoming less and less the rule. Instead, a gadolinium scan is requested in specific cases when imaging is needed for the follow-up scans is becoming less and less the rule."
Riklund to unveil the next big thing in hybrid imaging

The Swedish radiologist Prof. Katrine Riklund, the current Chair of the ESR Board of Directors, has dedicated her career to the development of hybrid imaging. During today’s Marie Curie Honorary Lecture (Room A, 1:00 p.m.) she will look back at the achievements made in this emerging field and look forward to future advances.

Prof. Katrine Riklund from Umeå, Sweden, will speak about the growing importance of hybrid imaging today’s lecture.

Riklund, who is a professor and researcher in diagnostic and interventional radiology and professor of diagnostic imaging at Umeå University, is a key figure in this field. She is one of the first researchers to have recognised the potential of combining FET with CT and MRI, and has worked to advance the field ever since its emergence at the beginning of the 21st century.

Riklund’s work in hybrid imaging is based on the growing importance of structural and functional/molecular imaging in general. The entire field, new and extremely interesting, and is the closest to my heart when it comes to imaging,” she said.

During her lecture, Prof. Riklund will share examples of what hybrid imaging can do and what is going to come next. A major trend will be making use of the entire hybrid imaging examination for diagnostic purposes, also for the CT part, she believes. “This changes workflow and gives more information than CT or MRI are not competing techniques, they are complementary,” she said.

One development is key for EET but digital detectors will also represent a major step forward. Currently the need for a cyclotron for production of radionuclides hinders substantial distribution of tracers outside large centers. To make hybrid imaging really take off, we need faster and more stable production of these tracers,” she said.

Riklund is involved in various research projects, such as COBRA, a prospective multinational imaging study of prostate cancer, which started in 2015. She has also been involved in COBRAþ, a study of advanced prostate cancer with an emphasis on the role of FET/Fluorine-18 PET/CT for follow-up and staging.

The hybrid imaging field is fascinating, and also formed the basis of competence. This work will, in the end, also bring us closer to the patients,” she said.

The growth in computing power and equipment has also been a key factor. “The financial situation is always a challenge and can influence competence,” she said. “But this can be solved by strategic cooperation. The financial situation is always a challenge and can influence competence,” she said. “This should not discourage medical students from choosing radiology as a specialty, however, as it is fascinating and of great importance in most areas of healthcare. Imaging influences diagnosis, treatment planning and follow-up. And if you choose interventional radiology you will also save a lot of time in unnecessary tests.”

“The next step will be the radiolabeling, capability to create added value by integrating imaging data with other clinical data for support in personalised/prognostic medicine for treatment planning and prognostic among other applications. The growth in computing power and equipment has also been a key factor. “The growth in computing power and equipment has also been a key factor. “The financial situation is always a challenge and can influence competence,” she said.

The growth in computing power and equipment has also been a key factor. “The growth in computing power and equipment has also been a key factor. “The financial situation is always a challenge and can influence competence,” she said.

Riklund to unveil the next big thing in hybrid imaging

The Swedish radiologist Prof. Katrine Riklund, the current Chair of the ESR Board of Directors, has dedicated her career to the development of hybrid imaging. During today’s Marie Curie Honorary Lecture (Room A, 1:00 p.m.) she will look back at the achievements made in this emerging field and look forward to future advances.

Prof. Katrine Riklund from Umeå, Sweden, will speak about the growing importance of hybrid imaging today’s lecture.
Future radiologists – orchestrators and conductors

Orchestrator may be the next buzzword in radiology. If radiologists don’t take the lead, many of the new systems may be conducted directly by the ordering clinicians and they may not wait for radiology to show an interest.

BY PETER LEANDER

In recent years, the role of the radiologist has changed significantly. The days of reading images exclusively are numbered. Today, radiologists play a more active role in patient care, working collaboratively with other healthcare professionals to improve patient outcomes.

Radiologists are increasingly involved in the planning and implementation of new technologies, such as artificial intelligence (AI), image guidance, and machine learning. They are also developing new ways of working, including virtual reality and augmented reality, to enhance patient care.

In addition, radiologists are becoming more involved in decision-making processes, such as treatment planning and patient follow-up. This shift in role is being driven by the increasing complexity of medical technology and the need for radiologists to keep up with the latest developments.

The future of radiology is likely to be characterized by a greater focus on prevention and early detection of disease, as well as on the use of personalized medicine. Radiologists will need to be well-versed in these areas in order to remain at the forefront of medical practice.

However, the role of the radiologist is not just about technology. It is also about the radiologist’s ability to communicate effectively with other healthcare professionals, to provide clear and concise reports, and to ensure that patients receive the best possible care.

In conclusion, the future of radiology is bright, but it will require a new mindset and a willingness to embrace change. Radiologists will need to continue to develop their skills and knowledge, and to work collaboratively with other healthcare professionals, in order to deliver the best possible care to their patients.

Peter Leander is an Associate Professor at Lund University and Regional Radiology Officer in the Region Halsingland, Sweden.

#ECR2018

ECR TODAY | FRIDAY, MARCH 2, 2018

HIGHLIGHTS

Professional Issues and Economics in Radiology (PIER) Sessions
Friday, March 2, 16:00–17:30, Room M 2
PIER 1 Establishing competence in radiology
Moderators: P. Leander; Malmö/SE
- Achieving homogeneity in radiology education: linking content to competencies through the European training curriculum
- E.J. Adam; London/UK
- C.D. Becker; Geneva/CH
- K.J. Dreyer; Boston, MA/US
- How to cope with the new IT developments: the developer's perspective
- P. Leander; Malmö/SE

Friday, March 2, 12:00–15:00, Room M 2
PIER 2 Radiology will survive, but will the radiologist still be there?
Moderators: P. Leander; Malmö/SE
- The landscape in radiology is changing: the radiologist need to adapt
- P. Leander; Malmö/SE
- Big data, artificial intelligence, machine learning, deep learning etc.: what radiologists should know
- E. Derchi; Genoa/IT
- How to manage the incompetent professional?
- J.K. Bell; Manchester/UK
- Panel discussion: Overcoming homogeneity in radiology competence across Europe: a dream or reality?
- E.J. Adam; London/UK

Friday, March 2, 16:00–17:30, Room M 2
PIER 3 Value-based radiology
Moderators: P. Leander; Malmö/SE
- Basic concepts of value-based radiology: U.S. perspective
- J.A. Brink; Boston, MA/US
- Basic concepts of value-based radiology: European perspective
- L.E. Derchi; Genoa/IT
- New metrics are required for value-based radiology
- M. McNulty; Dublin/IE
- Panel discussion: A European-US. debate on the value of 'value-based radiology'
- J.A. Brink; Boston, MA/US
- M. McNulty; Dublin/IE
- L.E. Derchi; Genoa/IT
- E.J. Adam; London/UK

Cardiovascular and Interventional Radiological Society of Europe

Lisbon, Portugal
September 22-25
CIRSE 2018

FEARLESS

Interdisciplinary
Endovascular
Aortic Symposium

IDEAS

myESR.org
How difficult did you find yesterday’s question?

Today there is a new opportunity to take the EDiR examination for free next year at the ECR 2019.

Solve the question posted at the EBR blog before 13:30h.

The correct answer and the winner will be announced today at 14:00h at the EBR blog.

The question will be discussed today during the EDiR Teaser at 13:30 at Room Z.

Go to the EBR blog at blog.myebr.org in order to look for the EDiR question of the day. You will also find further interesting resources such as Dr. Pepe’s Diploma Casebook, EDiR Mnemotechnics and other useful tips to prepare for the examination.

The European Board of Radiology will raffle amongst the winners an examination place for the EDiR that will take place at the ECR 2019. The registration for the ECR 2019 is also included!

The European Diploma in Radiology – Question of the Day
MRI holds promise for immunotherapy but needs more research

Immunotherapy is a booming field and recent trials have shed light on the effects of these drugs on cancer. A panel of experts will unveil the latest results and discuss the challenges for imaging in triaging patients and assessing treatment response during the dedicated New Horizons session today at ECR.

Immunotherapy drugs enhance the body’s immune system to get rid of cancer cells. The idea is not new but is having a rebirth as new information emerges. “Immunotherapy deserves to be the focus of a New Horizons session at ECR,” according to Vicky Goh, professor of cancer imaging at King’s College London and honorary consultant radiologist at Guy’s and St Thomas’ Hospital in London.

“It is very much a hot topic right now but also a challenge for imaging. This is the right time for the imaging community to think about how we can we assess the effectiveness of these agents,” said Goh, who will chair the New Horizons session.

These drugs have been tried in a number of cancers including renal cell cancer, prostate cancer, colorectal cancer and melanoma. They have notably improved progression-free survival in patients with advanced disease, e.g. melanoma.

Response to treatment has been assessed mainly with CT. But assessing response remains tricky even on CT, especially since these drugs can cause tumours to grow as a secondary effect, when the body’s immune system is being stimulated. This is because immune and T-cells are being stimulated in the body. So if you just look at the size change with standard response criteria, i.e. RECIST, this can be misleading,” Goh said. For this reason, modified response criteria, e.g. immune-related response criteria (irRECIST) have been developed for assessing treatment response using imaging.

These drugs may be effective, but they can also have significant side effects. Having reliable results just a few weeks after treatment onset may help to reduce toxicity and improve patient management, according to Prof. Dow-Mu Koh, professor in functional cancer imaging and consultant radiologist at The Royal Marsden Hospital, London.

“The holy grail is that we want to use some other tests and measurements to measure parameters other than size, to determine tumour response,” said Koh, who will talk during the session.

MRI has emerged as an interesting modality, as it can provide information on tumour vascularity and cellularity, he explained. “It may enable earlier identification of treatment effects, as well as detect adverse effects from treatment. Diffusion-weighted imaging can help measure cellularity and dynamic contrast-enhanced MRI enables us to assess vascularity. And then we can also look at the complexity of the tumour environment, i.e. proteins, using magnetisation transfer MR,” he said.

MRI’s particular value is that it gives better image definition of the tumour in areas such as the brain, tumours in the extremities of the body, and sarcoma and soft tissue sarcoma, where CT traditionally has difficulty.

However the reality is a bit more complicated, especially for new drug development. “A lot of us who are doing this find it to be a very complicated task. It’s hard to measure drug effect especially when the effectiveness of a new drug is unknown. In malignant melanoma, we know that immunotherapy drugs work well in a significant proportion of patients, so we may be able to identify an MRI signature of treatment response,” Koh said.

PET/CT is still in the experimental phase and there is no clinically validated data yet. However, it could be an interesting option to investigate in immunotherapy, he believes. “PET/CT allows us to combine the specificity of PET tracers with MRI to visualise disease behaviour; but there isn’t a lot of output at the moment.”

Radiomics, which generates data from images that are invisible to the human eye, could be an additional tool in this setting. “I think radiomics will have a place in the future of radiology and would also likely contribute in the realm of immunotherapy. However, at the moment, nobody has a very good solution, although many imaging biomarker trials are in development,” Koh said.

Another specific contribution for MRI will be in the surveillance of adverse effects. “You may not identify these complications on CT or PET/MRI with its exquisite soft tissue contrast can demonstrate complications that can affect patient management.”

PET/MR is still in the experimental phase and there is no clinically validated data yet. However, it could be an interesting option to investigate in immunotherapy, he believes. “PET/MR allows us to combine the specificity of PET tracers with MRI to visualise disease behaviour; but there isn’t a lot of output at the moment.”

Radiomics, which generates data from images that are invisible to the human eye, could be an additional tool in this setting. “I think radiomics will have a place in the future of radiology and would also likely contribute in the realm of immunotherapy. However, at the moment, nobody has a very good solution, although many imaging biomarker trials are in development,” Koh said.

Another specific contribution for MRI will be in the surveillance of adverse effects. “You may not identify these complications on CT or PET/MRI with its exquisite soft tissue contrast can demonstrate complications that can affect patient management.”
Radiographers: foster the human touch in the age of artificial intelligence

The advent of artificial intelligence (AI) in combination with permanently evolving imaging techniques and machines has created a complex working environment, and there is an ever greater demand for radiographers to create strategies and pathways to make themselves necessary and prepare to develop their professional service. At a Special Focus Session today, ECR delegates will hear about the risk of the machines taking over if radiographers don’t fully develop their role and underline the added value of their service.

Radiographers should prioritise the interpersonal aspects of medical imaging and radiotherapy, said G. Paulo from Coimbra Health School, Portugal. “Effective dose should be communicated to the patient in a way that allows the patient to determine what is important for them, rather than being told. It is also important to consider what factors the patient is aware of when discussing radiation risk.”

“Radiographers need to become more than just technicians. We need to provide more than just the ‘human touch’ in patient management, and bring more to the service, becoming obsolete as robots begin to work,” he explained. “We must guarantee not just the procedures and the demand for more patient contact, but also the ‘human touch’ in patient management, which is important to ensure adequate care is offered and maintained for the patient. This is also important to ensure accurate communication about the treatment and its purpose, and the risks associated with it.”

The WHO guidance document on Radiation and the Human Body is an important starting point for the harmonisation of radiation safety strategies for the European Union (EU), pointing to the importance of strategies for harmonising risk management and patient communication. “We must guarantee not just the communication of radiation risk, but also the importance of the role of the patient in the radiation process,” he said. “It is also important to consider what factors the patient is aware of when discussing radiation risk, and how we can bring more than this to the service, becoming obsolete as robots begin to work.”

“Radiographers should understand the importance of transparent and accurate communication in risk management and patient communication. This is an important tool for the patient to understand the treatment and the risks involved, and to make informed decisions.”

“Effective dose should be communicated to the patient in a way that allows the patient to determine what is important for them, rather than being told. It is also important to consider what factors the patient is aware of when discussing radiation risk. We must guarantee not just the procedures and the demand for more patient contact, but also the ‘human touch’ in patient management, which is important to ensure adequate care is offered and maintained for the patient. This is also important to ensure accurate communication about the treatment and its purpose, and the risks associated with it. We must guarantee not just the communication of radiation risk, but also the importance of the role of the patient in the radiation process.”

The session is part of the EuroSafe Imaging campaign. "Radiographers should understand the importance of transparent and accurate communication in risk management and patient communication. This is an important tool for the patient to understand the treatment and the risks involved, and to make informed decisions," he said. "Effective dose should be communicated to the patient in a way that allows the patient to determine what is important for them, rather than being told. It is also important to consider what factors the patient is aware of when discussing radiation risk. We must guarantee not just the procedures and the demand for more patient contact, but also the ‘human touch’ in patient management, which is important to ensure adequate care is offered and maintained for the patient. This is also important to ensure accurate communication about the treatment and its purpose, and the risks associated with it. We must guarantee not just the communication of radiation risk, but also the importance of the role of the patient in the radiation process."
In a dedicated Special Focus session at ECR 2018 today, three experts will illustrate the challenges they face in the management of head and neck emergencies.

**By Katharina Miedzinska**

**A to Z of radiation dose management, courtesy of EuroSafe Imaging campaign and EFOMP**

It lingers in the back of every radiologist’s mind: radiation dose. How can you lower dose? How do you track it? What’s the standard and acceptable level for a procedure? Luckily for ECR 2018 delegates, two presentations on dose management systems and repositories, organised by the European Federation of Organisations for Medical Physics (EFOMP), will answer all of those questions and more.

EFOMP Workshops (European Federation of Organisations for Medical Physics)

Friday, March 2, 10:30–12:00, Room G

**If E2 Dose management systems and repositories: part A**

Moderator: J. Dreslinski; Gdańsk/PL

**Chairpersons’ introduction**

**The TsarSafe Imaging campaign: point of view**

T. Piotrowski; Varsovia/PL

**Strategies for dose management for achieving optimized imaging**

J. Vassileva; Vienna/AT

**The benefits of dose-management systems in view of the new European Directives**

V. Trapolikis; Athens/GR

Friday, March 2, 12:30–14:00, Room G

**If E2 Dose management systems and repositories: part B**

Moderator: M. Brambilla; Novara/IT

**Chairpersons’ introduction**

**The TsarSafe Imaging campaign: point of view**

D. Gibaud; Rennes/FR

**Organization of dose management systems and repositories for radiation protection and biomedical research. possibilities and limitations of current implementations and standards**

B. Mazzotti; Milano/IT

**Imaging and dose repositories: tools to boost radiation protection**

E. Tors; Pisa/IT

**The ACR as dose registry: setting a benchmark**

M. McNeil; Baltimore, MD

**These resources are part of the EuroSafe Imaging campaign.**
Clinical Corner

Radiographers are jointly responsible for accurate image manipulation and deal with interventional, non-invasive, and invasive procedures, as well as with health surveillance and the examination of the extremities which may occur during an examination. In summary, radiographers provide essential healthcare services to patients on a daily basis. They also have access to the latest technology, with new areas such as questionnaires and fill-in sheets added to their role. The role of radiographers is expanding rapidly, and they are increasingly involved in the planning and implementation of new imaging techniques. Radiographers are key members of the medical imaging team and work closely with other healthcare professionals to ensure that patients receive the best possible care.
Diagnostic performance of QISS non-contrast MRA for diagnosis of acute lower limb ischaemia

By Yasser Ragab

The diagnostic performance of a quiescent interval single-shot (QISS) non-contrast MRA technique at 3 Tesla for the diagnosis of acute lower limb ischaemia was evaluated. The study included patients with peripheral arterial disease (PAD) and the QISS MRA was compared with confirmatory imaging studies. The accuracy of QISS MRA was assessed using a modified two-dimensional balanced steady state free precession (2D-BSF) sequence, which minimizes flow and motion artefacts.

For patients with acute symptomatic peripheral vascular disease (PVD), clinical evaluation can be performed using non-invasive tests including biological variability cuff size and placement, examination skill, or the presence of a peripheral arterial calcification, preventing cuff occlusion. Interpretation of all vascular diagnostic testing requires an appreciation of the limitations, pitfalls, and artefacts of the testing modality. Interpretation errors can result in an incorrect diagnosis and faulty subsequent decision-making. Let us take a closer look at some of the more common, typically invasive, tests used on PVD patients.

While segmental Doppler pressures and pulse volume recording are the most appropriate techniques for screening symptomatic patients, more sophisticated non-invasive imaging techniques may be necessary for further anatomic evaluation and treatment planning, especially before revascularisation. The American College of Radiology (ACR) rates both CT angiography (CTA) and MR angiography (MRA) as usually appropriate diagnostic approaches. However, because many patients with peripheral arterial disease (PAD) suffer from renal insufficiency, the administration of either iodinated or gadolinium-based contrast media may be of concern given the increased risk of contrast-induced nephropathy or nephrogenic systemic fibrosis (NSF), respectively.

Contrast-enhanced MRA also occasionally has the disadvantage of venous contamination hindering proper assessment of leg arteries. Another limitation of CTA appears in the presence of heavy leg arterial calcification, which may lead to false negative diagnosis. These concerns with the risks of contrast media administration in combination with recent technical advances have led to an increased interest in non-contrast MRA techniques.

Quiescent-interval single-shot (QISS) MRA is a recently introduced, robust, non-contrast MRA technique. It was developed by Edelman et al. as a means of evaluating PAD without using gadolinium-based agents. QISS is a rapidly acquired, unenhanced MRA sequence which minimizes flow and motion artefacts using ECG gating. Data is acquired using a modified two-dimensional balanced steady state free precession pulse sequence with fat suppression. A quiescent interval is incorporated to optimise enhancement of inflowing blood.

For further information on the detailed programmes and registration, please visit myESR.org/esor

ESOR ASKLEPIOS Courses 2018

The established ASKLEPIOS project is tailored toward serving professional development by addressing recognised needs in the context of continuous radiological education. Its programmes include multithematic, organ-oriented, multimodality and multidisciplinary advanced courses, aimed at senior residents, general radiologists, private practitioners in radiology, and allied specialists.

For further information on the detailed programmes and registration, please visit myESR.org/esor

ESOR Courses for EdIR 2018

ESOR is continuing to organise preparatory courses for residents and board-certified radiologists, wishing to take the exams of the European Diploma in Radiology (EDIR). A series of courses is organised at the ESR Learning Centre in Vienna/Austria at the end of the year. It is possible to attend either one course only, or several courses of the series.

ESOR in partnership

myESR.org
Technical developments and system improvements are enabling clinicians to utilise CT to make more confident diagnoses in increasingly complex cases. As older scanners struggle to cope with the ever greater demands of a radiology department, exhibitors at the ECR 2018 technical exhibition are eager to show end users how the latest systems can provide clinically valuable and reliable functional information without increasing radiation dose or adding extra expense.

CT manufacturers step up search for definitive and cost-effective disease characterisation

Building on the success of the Revolution family, GE Healthcare is introducing Revolution Frontier, a 128-slice scanner with a 0.33-second gantry rotation speed designed to make it easier to undertake spectral CT examinations. It features a new imaging chain, Gemstone Clarity detector and Performix HD Plus x-ray tube, the combination of which enables the scanner to achieve anatomic detail of 0.23 mm with 20% less electronic noise, the vendor stated.

"In today’s healthcare environment, clinicians need tools that get to the diagnosis quickly," said Valerie Brissart, molecular imaging and CT product marketing director for Europe for GE Healthcare. "We believe that CT is that fast and effective tool, and that spectral CT further enhances disease characterisation, reducing the need for follow-on diagnostic tests."

In addition, GE is presenting Smart Subscriptions, a one-two-per-device per year subscription that provides continuous access to the latest software and applications for a hospital or clinic’s CT devices. This is said to avoid obsolescence of a system, ensure the same CT capabilities at all sites provide consistent exams throughout a healthcare enterprise, increase staff efficiency, reduce the need for training and improve satisfaction by ensuring there is one set of capabilities to learn, operate and read.

Siemens Healthineers is promoting its latest scanner portfolio for CT, including Somatom go.Ani and Somatom go.Tu, which are suitable for advanced clinical fields such as cardiology and CT-guided interventions. With a rotation time of 0.33 seconds and the Stellar detector technology, the 64-slice Somatom go.Ani can cover scan ranges of up to 100mm in one second. The 256-slice Somatom go.Tu can perform whole-body scans of up to 200cm with a scan speed of up to 175mm per second.

The vendor's Somatom Edge Plus single-source system and Somatom Force dual-source system allow end users to cover a range of CT applications, regardless of the patient or the clinical issue at hand. One of the fully assisting scanner technology (FAST) applications that are integrated into the systems is the FAST 3D Camera for automatic patient positioning. A 3D camera fitted above the patient table uses artificial intelligence and deep learning technologies to recognise the patient’s anatomical landmarks and the table then automatically moves into the correct position and adopts the correct height to position the desired body region at inception and achieve an optimal examination result, according to the vendor.

Canon Medical Systems is introducing Aquilion Precision, a ultra-high-resolution CT (UHR-CT) scanner designed to improve early detection of disease and tumour classification due to its enhanced image detail that capability to image anatomy as small as 150 microns.

On display too is the latest version of the Aquilion One Genesis Edition Area Detector CT. Image quality in all anatomical regions is enhanced by a full iterative reconstruction technique, and further workflow improvements and increased patient safety are made possible with the Position, which accurately centres the patient within the centre of the gantry, by a single mouse-click, without radiographers having to move the patient.

Also, Canon's Infinix-i 4D hybrid interventional radiology lab and CT system can be used to perform a wide range of procedures, including tumour therapy, embolisation, arterial interventions, dialysis, and stent placement. It offers dose management features, including AIDR (adaptive iterative dose reduction) 3D. Additionally, the firm is highlighting Aquilion Prime SP, an upgrade of the Prime platform in an 80-detector-row package with 0.33-second gantry rotation speed. Newly designed PureVision optics and its latest PureVision CT detector are said to offer superior image detail and resolution.

Hitachi is demonstrating Supria TrueX, a compact 64-slice CT scan...
Will artificial intelligence sell more CT systems?

It is already becoming clear that artificial intelligence (AI) will have a big play to play in the future of medical imaging. However, less clear is the impact of AI on the commercial market for medical imaging hardware. If we take the case of CT, a multi-billion-Euro hardware and services market, will AI drive greater demand for systems, or less? Below, we look at a few of the trends shaping the direction of the CT and discuss if, and how, AI will play a role.

By Steve Holloway

Setting up and running multi-centre clinical studies can lead to a great deal of time-wasting and compiles administrative tasks. EIBIR provides support service to clinical studies investigating or evaluating diagnostic imaging methods. In addition to its regular project preparation and management services for collaborative research projects, this includes assessing the technical diagnostic performance, clinical effectiveness, effectiveness and cost-effectiveness of imaging methods.

Clinical Trial Unit (CTU), offers extensive support for both the recruitment and data collection phases as well as the execution phase of clinical studies. By providing the knowledge from international research networks, expertise in compliance with local regulations, consent procedures, and implementing process (HealthMyne), Virtual Resident (CADx) offers a number of advanced software tools, which are intended to support the routine use of incidental findings in a time-effective manner.

3D exams using cone beam CT (CBCT) offer a range of advantages compared with the traditional X-ray technique, including improved tissue delineation in the treatment plane, the company said. They can also adjust image processing according to the amount of metal present. The software from the original CBCT systems is consequently the enabling technology for the hybrid imaging studies.

Sensys is the Sensys Mobile line of 3D CT scanner system.

It features a number of enhancements compared with the vendor’s Centric CT, including improved coverage for oral and maxillofacial imaging applications, a flat panel detector and a 50kVatt version, making it suitable for vascular imaging applications with effective output levels of 25kVatt. It also features advanced image processing and multi-modal capabilities, making it suitable for orthopaedic surgery.

Sensys is the Sensys Mobile line of 3D CT scanner system.

ABSTRACT

Two clinical studies in diagnostic imaging benefit from EIBIR support

The European Institute for Biomedical Imaging Research (EIBIR) provides its support to two industry-funded multi-centre clinical studies, SPECIFIC and MIPA, investigating methods in myocardial perfusion imaging and breast cancer imaging respectively.

BY PETER GORDEBEKE AND KATHARINA KRISCHAK

EIBIR Executive Director

ESR Scientific/Educational Director

Nicholas Gourtsoyiannis, Athens/GR

Committee Chair

Regina Beets-Tan, Amsterdam/NL

National Societies Committee Chair

Christoph D. Becker, Geneva/CH

Committee Chair

ESR Executive Council

Editorial Board

3D exams using cone beam CT (CBCT) offer a range of advantages compared with the traditional X-ray technique, including improved tissue delineation in the treatment plane, the company said. They can also adjust image processing according to the amount of metal present. The software from the original CBCT systems is consequently the enabling technology for the hybrid imaging studies.

Sensys is the Sensys Mobile line of 3D CT scanner system.

It features a number of enhancements compared with the vendor’s Centric CT, including improved coverage for oral and maxillofacial imaging applications, a flat panel detector and a 50kVatt version, making it suitable for vascular imaging applications with effective output levels of 25kVatt. It also features advanced image processing and multi-modal capabilities, making it suitable for orthopaedic surgery.

Sensys is the Sensys Mobile line of 3D CT scanner system.

ABSTRACT

Two clinical studies in diagnostic imaging benefit from EIBIR support

The European Institute for Biomedical Imaging Research (EIBIR) provides its support to two industry-funded multi-centre clinical studies, SPECIFIC and MIPA, investigating methods in myocardial perfusion imaging and breast cancer imaging respectively.

BY PETER GORDEBEKE AND KATHARINA KRISCHAK

EIBIR Executive Director

ESR Scientific/Educational Director

Nicholas Gourtsoyiannis, Athens/GR

Committee Chair

Regina Beets-Tan, Amsterdam/NL

National Societies Committee Chair

Christoph D. Becker, Geneva/CH

Committee Chair

ESR Executive Council

Editorial Board

3D exams using cone beam CT (CBCT) offer a range of advantages compared with the traditional X-ray technique, including improved tissue delineation in the treatment plane, the company said. They can also adjust image processing according to the amount of metal present. The software from the original CBCT systems is consequently the enabling technology for the hybrid imaging studies.

Sensys is the Sensys Mobile line of 3D CT scanner system.

It features a number of enhancements compared with the vendor’s Centric CT, including improved coverage for oral and maxillofacial imaging applications, a flat panel detector and a 50kVatt version, making it suitable for vascular imaging applications with effective output levels of 25kVatt. It also features advanced image processing and multi-modal capabilities, making it suitable for orthopaedic surgery.

Sensys is the Sensys Mobile line of 3D CT scanner system.

ABSTRACT

Two clinical studies in diagnostic imaging benefit from EIBIR support

The European Institute for Biomedical Imaging Research (EIBIR) provides its support to two industry-funded multi-centre clinical studies, SPECIFIC and MIPA, investigating methods in myocardial perfusion imaging and breast cancer imaging respectively.

BY PETER GORDEBEKE AND KATHARINA KRISCHAK

EIBIR Executive Director

ESR Scientific/Educational Director

Nicholas Gourtsoyiannis, Athens/GR

Committee Chair

Regina Beets-Tan, Amsterdam/NL

National Societies Committee Chair

Christoph D. Becker, Geneva/CH

Committee Chair

ESR Executive Council

Editorial Board

3D exams using cone beam CT (CBCT) offer a range of advantages compared with the traditional X-ray technique, including improved tissue delineation in the treatment plane, the company said. They can also adjust image processing according to the amount of metal present. The software from the original CBCT systems is consequently the enabling technology for the hybrid imaging studies.

Sensys is the Sensys Mobile line of 3D CT scanner system.

It features a number of enhancements compared with the vendor’s Centric CT, including improved coverage for oral and maxillofacial imaging applications, a flat panel detector and a 50kVatt version, making it suitable for vascular imaging applications with effective output levels of 25kVatt. It also features advanced image processing and multi-modal capabilities, making it suitable for orthopaedic surgery.

Sensys is the Sensys Mobile line of 3D CT scanner system.

ABSTRACT

Two clinical studies in diagnostic imaging benefit from EIBIR support

The European Institute for Biomedical Imaging Research (EIBIR) provides its support to two industry-funded multi-centre clinical studies, SPECIFIC and MIPA, investigating methods in myocardial perfusion imaging and breast cancer imaging respectively.

BY PETER GORDEBEKE AND KATHARINA KRISCHAK

EIBIR Executive Director

ESR Scientific/Educational Director

Nicholas Gourtsoyiannis, Athens/GR

Committee Chair

Regina Beets-Tan, Amsterdam/NL

National Societies Committee Chair

Christoph D. Becker, Geneva/CH

Committee Chair

ESR Executive Council

Editorial Board

3D exams using cone beam CT (CBCT) offer a range of advantages compared with the traditional X-ray technique, including improved tissue delineation in the treatment plane, the company said. They can also adjust image processing according to the amount of metal present. The software from the original CBCT systems is consequently the enabling technology for the hybrid imaging studies.

Sensys is the Sensys Mobile line of 3D CT scanner system.

It features a number of enhancements compared with the vendor’s Centric CT, including improved coverage for oral and maxillofacial imaging applications, a flat panel detector and a 50kVatt version, making it suitable for vascular imaging applications with effective output levels of 25kVatt. It also features advanced image processing and multi-modal capabilities, making it suitable for orthopaedic surgery.

Sensys is the Sensys Mobile line of 3D CT scanner system.

ABSTRACT

Two clinical studies in diagnostic imaging benefit from EIBIR support

The European Institute for Biomedical Imaging Research (EIBIR) provides its support to two industry-funded multi-centre clinical studies, SPECIFIC and MIPA, investigating methods in myocardial perfusion imaging and breast cancer imaging respectively.

BY PETER GORDEBEKE AND KATHARINA KRISCHAK

EIBIR Executive Director

ESR Scientific/Educational Director

Nicholas Gourtsoyiannis, Athens/GR

Committee Chair

Regina Beets-Tan, Amsterdam/NL

National Societies Committee Chair

Christoph D. Becker, Geneva/CH

Committee Chair

ESR Executive Council

Editorial Board

3D exams using cone beam CT (CBCT) offer a range of advantages compared with the traditional X-ray technique, including improved tissue delineation in the treatment plane, the company said. They can also adjust image processing according to the amount of metal present. The software from the original CBCT systems is consequently the enabling technology for the hybrid imaging studies.

Sensys is the Sensys Mobile line of 3D CT scanner system.

It features a number of enhancements compared with the vendor’s Centric CT, including improved coverage for oral and maxillofacial imaging applications, a flat panel detector and a 50kVatt version, making it suitable for vascular imaging applications with effective output levels of 25kVatt. It also features advanced image processing and multi-modal capabilities, making it suitable for orthopaedic surgery.

Sensys is the Sensys Mobile line of 3D CT scanner system.
Hidden in plain sight: radiomics helps predict lung cancer prognosis on CT

BY TUGBA AKINCI D’ANTONOLI

When in 1814 German physicist Gustav Kirchoff and optical lens manufacturer Joseph von Fraunhofer invented the spectroscope, they trained their instruments on the sun. He ended up identifying hundreds of fixed lines in its spectrum. That basic instrument on the sun. Fraunhofer had given astronomy a revolutionary tool, which he used to transform the chemical composition of stars by the light that it was able to split into its elemental components. One day after another, he deduced the abundance of elements that could be found in the sun, and thus in the universe.

Similarly, radiomics has been providing a similar capacity to transform the diagnostic, imaging, and clinical processes on the human body. Radiomics, an emerging field of study, is using the capacity of computers has reached the level where it is now possible to glean much more detailed information about tissues imaged with CT. A new field of study, named radiomics, is arising to capture large amounts of quantitative features from medical images, in a way similar to the use of spectral bands in the near-infrared, mid-infrared, or THz bands to design a recurrence prediction model using the radiomics analysis of tumours and peritumoural regions on pre-surgical CT scans in NSCLC patients. Second, to establish a machine-learning system with the combination of the patient classification, pathological, risk factors, and radiomics signature.

We retrospectively evaluated six patients with pathologically confirmed NSCLC at two different stages: stage IIB and stage IIIA, who were surgically treated. We showed that radiomics analysis of tumour and peritumoural lung regions could predict NSCLC recurrence and stratify patients in risk, thereby enabling a personalized treatment.

Moreover, we established that with a large sample size, potential prognosticators are necessary to optimize radiomics for lung cancer patients before routine clinical usage. We are at the threshold of an era where radiomics promise to help determine prognosis from a multitude of data down-scale the images that until recently showed to our naked eye and did not necessarily tell about their outcomes.

Two Symposiums were held this morning: EuroSafe Imaging (“Innovating, Embracing the Future”)

EuroSafe Imaging Session
Friday, March 2, 14:00–15:30, Room 2

Chairpersons: J. Damilakis [Chair]; F. Doellinger; M. R. Perez; E. Vaño; G. Frija; N. Saltybaeva

1. A Scientific Board that has been set-up to be co-chaired on the main project activities and outcomes.
2. A Scientific Board that has been set-up to verify the used data using established standards and protocols. Information about clinical dose reference levels (DRLs) was also generated from national commission authorities and the European and national stakeholders involved in the project.
3. A network of EuroSafe Imaging from hospital and their experts.
4. Interaction with the Steering Group established by the European Commission, Directorate-General for Energy, and other relevant stakeholders.
5. Chairpersons’ introduction and update on the project on clinical dose reference levels.
6. An update on current European diagnostic reference levels (DRLs).
7. An update on current European radiological protection levels (DRPLs).
8. An update on current European diagnostic reference levels (DRLs).
9. An update on current diagnostic reference levels (DRLs).
10. An update on current national diagnostic reference levels (DRLs).
11. The concept of diagnostic reference levels (DRLs).
12. An update on current European diagnostic reference levels (DRLs).
13. The concept of diagnostic reference levels (DRLs).
15. An update on current national diagnostic reference levels (DRLs).
16. An update on current European diagnostic reference levels (DRLs).
17. An update on current European diagnostic reference levels (DRLs).
18. The concept of diagnostic reference levels (DRLs).
The European Society of Radiology’s clinical audit tool

Audit simply means comparing an element of clinical practice against an agreed standard. In radiological practice this might mean what we do, how we do it, what equipment we use, or how we interact with our patients, our colleagues and our environment. Therefore, the question we answer by conducting audit is: are we safe?

ECR Today - Friday, March 2, 12:00–12:45, Coffee & Talk C4 From volume-based to value-based radiology:

» Chairperson’s introduction
A. Brady, Cork/IE

» What is value in radiology and how can it be measured?
B. Kelly, Belfast/UK

» Value vs. value-based practice has been increasingly emphasised in recent years, focusing on what actu-

» What is value from an industry perspective?
J. Birch, Poole/UK

» What is ‘value’ in radiology and how can it be measured?

J. Adam has a longstanding interest in audit and standards committees, and is former chair of both the Royal College of Radiologists’ Audit and Standards Subcommittees, and of the ESR Quality Safety and Standards Committee. Dr. Adrián Bracy is a Consultant Radiologist in The Mercy University Hospital, Cork, Ireland, a former Dean of the Faculty of Radiologists, Royal College of Radiologists in Ireland and Chair of the ESR Quality Safety and Standards Committee.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.

A. Brady is a Consultant Radiologist in Ireland and Chair of the ESR Quality Safety and Standards Committee. Dr. Barry Kelly is the Chairman of the ESR Audit and Standards Subcommittees. Dr. Andrew Birch is a Consultant Radiologist in The Royal Cornwall Hospitals.
European Society of Oncologic Imaging reaches out to clinical societies

The European Society of Oncologic Imaging (ESOI) was launched in 2012. In the past five years, the ESOI has grown from 63 to almost 500 members. The majority of ESOI members work in large cancer institutes and hospitals and are part of multidisciplinary management teams. The member's sub-specializations reflect the broad spectrum of oncology with a focus on imaging of haematological, gastrointestinal, lung, breast, genitourinary, bone, soft tissue, head and neck, neurological, and paediatric cancers as well as interventional oncology. The ESOI is a subspecialty society of the European Society of Radiology (ESR) and affiliated with the ESR journals European Radiology, Insights into Imaging and European Radiology Experimental.

The main goal of the ESOI is to raise the scientific level and professional knowledge within the field of oncologic imaging. The ESOI currently has two main priority areas:

1. Firstly, the society is striving to provide high-quality education in cancer imaging and research not only in Europe, but also further afield, in countries both with and without access to high-quality oncological education. ESOI members come from 69 different countries, and all of these are outside Europe.

2. To provide education for a broad international forum, ESOI partners with the annual Oncologic Imaging Course (OIC) in Dubrovnik and was involved in the programme of the inaugural conference of the Society of Oncologic Imaging India (SOII) in Chennai.

Another of the society’s focuses when it comes to education is strengthening collaboration with other imaging subspecialty societies. We partnered successfully with the European Society for Hybrid Medical Imaging (ESHIM) Educational Course on Hybrid Imaging in Oncology in 2012 and the EuSoMI Annual Meeting in 2016. These are examples of how integration of the oncological imaging education offerings of different imaging societies can mutually benefit their members. The ESOI facilitates teaching on the use of imaging in research and clinical trials by offering live webinars on research methodology and workshops in collaboration with the European Organization for Research and Treatment of Cancer (EORTC).

Secondly, the ESOI is aiming to become an oncologic imaging society that will attract not only radiologists but also clinical specialists and scientists working in the field of oncology. There is no doubt that the input of radiologists in the multidisciplinary approach is crucial for an optimal treatment outcome. The world of cancer treatment is changing rapidly. Rapid translation of fundamental cancer research goes hand in hand with the quick implementation of innovative cancer treatments. Immunotherapy, only launched in clinics a few years ago, is increasingly being adopted in cancer care and requires radiologists to evaluate tumour response from a completely different perspective.

Whilst trying to fully comprehend these changes and understand our new role as radiologists, we are already faced with the challenges of the first steps towards a new paradigm shift in cancer treatment. With the recent launch of the first FDA approved cancer drug which bases its effect on a molecular biomarker rather than the traditional histological cancer type, we are shifting towards an era of modern oncological treatment where we will no longer refer to cancer as colorectal, lung, or breast cancer etc., but only describe the genetic, molecular and imaging biomarker profile of tumours. It will be more important than ever to understand the questions posed by our oncological clinical partners, which are becoming increasingly complex. The ESOI recognises this need and is striving towards creating an international platform that will bring together radiologists with clinical professionals such as surgical oncologists, medical oncologists, radiation oncologists and basic scientists in fields such as immunology, genomics, molecular pathology and biotechnology.

The ESOI successfully organised joint sessions in the 2016 and 2017 annual meetings of the European Society of Medical Oncology (ESMO) and will organise the very first ESOI/ESMO joint course in oncologic imaging in August 2018. The ESOI will also prioritise collaboration in membership programmes with clinical cancer societies and organisations such as the European Society of Surgical Oncology (ESSO), the European Society for Radiotherapy and Oncology (ESTRO) and the European Cancer Organisation (ECOC).

In the case of the ECOC, the ESOI is represented via the ESR, which is part of the ECOC board. With these opportunities on the horizon, the ESOI and its board would like to invite colleagues who would like to get involved in the ESOI’s activities and contribute to the exciting new developments in oncologic imaging to become members. www.esoi-society.org

Prof Regina Beets-Tan, MD, PhD, chairs the department of radiology at The Netherlands Cancer Institute, Amsterdam. She is president of the European Society of Oncologic Imaging (ESOI), president elect of the European Society of Gastrointestinal and Abdominal Radiology (EISGAR) and a member of the ESR Executive Council.
European Radiology’s new Editor-in-Chief looks forward to guiding the journal into a promising future

In January 2018, Prof. Yves Menu from Paris took over as Editor-in-Chief of the ESR’s flagship journal, *European Radiology*. *ECR Today* spoke to him about his new assignment and his vision for the future of the journal.

**ECRT:** What is your personal vision for *European Radiology* and how do you think your past experiences will inform the changes you plan to implement for the journal or your general vision for the journal?

**YM:** First of all, we need to speed up the process. Scientific changes are rapid, why should publication be slow? Given the necessity of peer-review, I believe that we cannot do better than 30 days on average before a first decision is reached without compromising the quality of the comments. My own challenge will be to remain below the 30 days for 90% of submissions. As this is largely dependent on the work of reviewers, I am very grateful to all those who volunteer for this anonymous, time consuming and not so rewarding task. They provide incredibly good advice and comments.

A second issue is ethical. We implemented a software analysis of similarities between submitted manuscripts and existing literature. The goal is to detect verbatim copies which breach copyright and, in rare cases, even plagiarism, which would then lead to immediate rejection without review.

A third initiative is to launch a series of ‘Editorial Comments’. We commonly publish manuscripts that have important implications for clinical practice, or which describe a real scientific advance. In this case, the article in itself might be a little too complicated to be read by non-specialists. Therefore, we ask an expert to briefly comment on this material, for extracting the reader’s attention to these topically relevant articles.

Another development is the evolution of manuscript titles, replacing very technical and detailed titles with clear clinical messages or questions. At the same time, we are encouraging authors to clarify the message of manuscript titles, replacing very technical and detailed titles with clear clinical messages or questions.

**ECRT:** What is your schedule of Editorial Comments? What is the best way for them to present their work?

**YM:** Yes, we have a lot of advice. All those who have submitted an article to *European Radiology* will notice that they get back not only comments about their study, but also advice for improvement. Let me take this opportunity to acknowledge our reviewers, and also the members of the Editorial Board. In addition, I would like to honour our three Deputy Editors, Rahal Kukuk-Huch, José María García Santos and Sujal Desai who do an incredible job handling manuscripts within their field of expertise.

**ECRT:** What does the future for journals like *European Radiology* look like?

**YM:** A French humourist, Pierre Dac, used to say that ‘predictions are very difficult, especially when they are about the future’. Let’s try anyway. Increasing electronic access will continue as an important trend; interactivity between authors and readers may be coming sooner than we think; changes in the presentation of manuscripts will become necessary; and data sharing is in the main-stream of scientific publishing that will be coming sooner than we think. Social media will be a main part of the journal itself, and not only a side show. We can also imagine studies being easily updated when needed, and not carved in stone as they are now.

**ECRT:** What specific changes are you planning to implement in the coming months?

**YM:** First of all, we need to speed up the process. Scientific changes are rapid, why should publication be slow? Given the necessity of peer-review, I believe that we cannot do better than 30 days on average before a first decision is reached without compromising the quality of the comments. My own challenge will be to remain below the 30 days for 90% of submissions. As this is largely dependent on the work of reviewers, I am very grateful to all those who volunteer for this anonymous, time consuming and not so rewarding task. They provide incredibly good advice and comments.

A second issue is ethical. We implemented a software analysis of similarities between submitted manuscripts and existing literature. The goal is to detect verbatim copies which breach copyright and, in rare cases, even plagiarism, which would then lead to immediate rejection without review.

A third initiative is to launch a series of ‘Editorial Comments’. We commonly publish manuscripts that have important implications for clinical practice, or which describe a real scientific advance. In this case, the article in itself might be a little too complicated to be read by non-specialists. Therefore, we ask an expert to briefly comment on this material, for extracting the reader’s attention to these topically relevant articles.

Another development is the evolution of manuscript titles, replacing very technical and detailed titles with clear clinical messages or questions. At the same time, we are encouraging authors to clarify the message of manuscript titles, replacing very technical and detailed titles with clear clinical messages or questions.

**ECRT:** Do you have any advice for authors? What is the best way for them to present their work?

**YM:** Yes, we have a lot of advice. All those who have submitted an article to *European Radiology* will notice that they get back not only comments about their study, but also advice for improvement. Let me take this opportunity to acknowledge our reviewers, and also the members of the Editorial Board. In addition, I would like to honour our three Deputy Editors, Rahal Kukuk-Huch, José María García Santos and Sujal Desai who do an incredible job handling manuscripts within their field of expertise.

**ECRT:** Interested authors should also join the ESR Publications Committee Session on Sunday at 8:30 a.m. in Room M 1 titled ‘How to write a scientific paper and how to get it published’.

**YM:** A French humourist, Pierre Dac, used to say that ‘predictions are very difficult, especially when they are about the future’. Let’s try anyway. Increasing electronic access will continue as an important trend; interactivity between authors and readers may be coming sooner than we think; changes in the presentation of manuscripts will become necessary; and data sharing is in the mainstream of scientific publishing that will be coming sooner than we think. Social media will be a main part of the journal itself, and not only a side show. We can also imagine studies being easily updated when needed, and not carved in stone as they are now.

**ECRT:** Really, I don’t know about the future in detail, but what I anticipate is that the future of *European Radiology* is brilliant, because this joint venture between ESR and Springer is an absolute guarantee for innovation and professionalism.
ETAP all geared up to support institutions throughout Europe and beyond

ETAP was founded in 2001 by the former European Association of Radiology (EVAR), the Union of Medical Specialists (UEMS) and the European Society of Radiology (ESOR) as a joint initiative of the European Training Assessment and Planning (ETAP) programme. Its aim was to create a common framework of radiological training in Europe and, therefore, to establish a basis for the harmonisation of radiology training across the member states of the European Union. It was established as a joint venture of the European Union of Medical Specialists (UEMS), the mother society, the Union of Medical Specialists (UEMS), and the European Society of Radiology (ESOR), to create a common framework for radiological training in Europe.

ETAP had two main tasks: to provide guidelines for the implementation of radiological training programmes and to assess the quality of radiological training programmes in Europe. ETAP was a European project that aimed to provide a common framework for radiological training in Europe and to establish a basis for the harmonisation of radiology training across the member states of the European Union.

ETAP worked closely with the European Commission and the Council of Europe to ensure that the European Union provided funding for the project. ETAP also worked with the European Society of Radiology (ESOR) to ensure that the project was implemented in a way that was consistent with the principles of the European Union.

ETAP was a European project that aimed to provide a common framework for radiological training in Europe and to establish a basis for the harmonisation of radiology training across the member states of the European Union.

ETAP was a European project that aimed to provide a common framework for radiological training in Europe and to establish a basis for the harmonisation of radiology training across the member states of the European Union.
The European Conference on Interventional Oncology (ECIO) and the rise of the fourth pillar of cancer care

The European Conference on Interventional Oncology (ECIO) was held from April 24–25 in Vienna, Austria.

In recent years, interventional oncology (IO) has become a greater field, expanding rapidly across the medical landscape. Interventional oncology is a fast growing and dynamic field with rapidly evolving technologies, and as such, it is crucial to provide guidelines with a regular focus for scientific communication and education in order to provide and share more evidence and pave new routes for the treatment of cancer patients. The European Conference on Interventional Oncology (ECIO) put on by the Cardiovascular and Interventional Radiological Society of Europe (CIRSE), has become an essential meeting where these innovations develop and take shape.

As interventional oncology is a rapidly evolving field, it is crucial for the conference to maintain a forward-thinking approach to the field. The conference is designed to showcase the selected presentations on interventional oncology in over this past year. With all these topics planned, the conference included over 200 papers in oncology over this past year. With all these topics planned, the conference included over 200 papers in oncology, providing a platform for the most innovative research to be shared and discussed.

Get involved

ECIO is able to make it to the conference, you can always aim to be involved in the discussions and research in these areas. This is a critical area, because it builds on emerging technologies and techniques, and it also provides an opportunity to offer a service to the patients, and to change the outcomes on a large scale, while increasing patient results and the available resources. Focusing on the critical areas of IO is a key way to achieve this goal. The conference is designed to showcase the latest research, which is clearly defined by the growing number of individual and institutional members. As of end December 2016, we had received over 360 abstracts from numerous countries and institutions from across the world.

With all this happening, it is clear that we can focus on these areas and beyond. We are planning to showcase the selected papers in oncology over this past year. With all these topics planned, the conference included over 200 papers in oncology, providing a platform for the most innovative research to be shared and discussed.

The European Society of Neuroradiology (ESNR) has been delivering considerable contributions in many areas of our field and is making progress in several projects. In these cases, there are long-standing partnerships and collaborations between IOs and other medical societies. IO is facing this new situation and adapting hard to adapt to these changes in our field.

The ESNR is faced with the challenge of being an active partner in the dialogue between the industry and radiologists, threatening the educational activities of IO, and the future of the European Conference on Interventional Oncology (ECIO) taking the first run on which participants had the opportunity to gain hands-on experience in image assessment and post-processing. The conference was well attended and was a great opportunity for all participants to be involved in discussions and to present their work.

The ESNR is also working to maximize the importance of IO to diagnostic and interventional neuroradiologists, to change the current landscape, and to preserve its role in building new research in these areas. This is a crucial area, because it builds on emerging technologies and techniques, and it also provides an opportunity to offer a service to the patients, and to change the outcomes on a large scale, while increasing patient results and the available resources. Focusing on the critical areas of IO is a key way to achieve this goal. The conference is designed to showcase the latest research, which is clearly defined by the growing number of individual and institutional members.

The ESNR has been developing considerable contributions in many areas of our field and is making progress in several projects. In these cases, there are long-standing partnerships and collaborations between IOs and other medical societies. IO is facing this new situation and adapting hard to adapt to these changes in our field.
News from the Swedish Society of Radiology

In the year 2017, the work of the Swedish Society of Radiology has focused more on developing previous work than initiating new concepts. As the first pure radiological quality registry in Sweden, there are now many opportunities for radiologists to work in the private sector from the comfort of their own home, from almost in Europe, or even from Sydney, Australia, taking care of the on-call service for Swedish hospitals. We expect the work of the general radiologist to change as a consequence of this, but the Society will continue to work for the quality of Swedish radiology, regardless of whether you work in the private or public sector.

Within the Society, we are looking to improve outcomes by introduc- ing new technologies in radiology, radiation safety, and an IT committee. We think more of the work of the Society and its members is to be done in the public sector. All in all, this year has been as produc- tive as previous years, and we look forward to 2018!

Dr. Henriette Ståhlbrandt is head of the Swedish Society of Radiology and works as a consultant radiologist and radiology director of Radiology in Linköping county in the south of Sweden.

By HENRIETTE STÅHLBRANDT ON BEHALF OF THE SWEDISH SOCIETY OF RADIOLOGY

#ECR2018
myESR.org
WHAT’S ON TODAY IN VIENNA?

FRIDAY, MARCH 2, 2018

THEATRE & DANCE

Eiswind / Hideg szelek
By Árpád Schilling and Éva Zabezsinszkij
AKADEMIETHEATER | 20:00
1030 Vienna, Lothringerstraße 20
www.burgtheater.at

Jedermann (stirbt)
By Ferdinand Schmalz
BURGTHEATER | 19:30
1010 Vienna, Universitätsring 2
Phone: +43 1 51444 4145
www.burgtheater.at

All About Eve
By Christopher Hampton
KAMMERSPLEGE DER JOSEFSTADT | 19:30
1010 Vienna, Rotenturmstraße 20
Phone: +43 1 42 700 300
www.josefstadt.org

Ein Körper für jetzt und heute
By Mehdi Moradpour
SCHAUSPIELHAUS | 20:00
1090 Vienna, Rotenturmstraße 20
Phone: +43 1 42 700 300
www.josefstadt.org

Fremdenzimmmr
By Peter Turrini
THEATER IN DER JOSEFSTADT | 19:30
1080 Vienna, Josefstädter Straße 26
Phone: +43 1 42 700 300
www.josefstadt.org

Viel Lärm um nichts
By William Shakespeare
VOLKSTHEATER | 19:30
1070 Vienna, Arthur-Schnitzler-Platz 1
Phone: +43 1 5211-0
www.volkstheater.at

CONCERTS & SOUNDS

Reinhard Mey
KONZERTHAUS | 20:00
1030 Vienna, Lothringerstraße 20
www.konzerthaus.at

Wiener Symphoniker
Conductor Alain Altinoglu
Renaud Capucon, violin
M. Ravel: Pavane pour une infante défunte;
E. Lalo: Symphonie espagnole d minor op.21;
J. Brahms: Symphonie No. 2 d major op. 73
MUSIKVEREIN | 19:30
1010 Vienna, Bösendorferstraße 12
www.musikverein.at

Three Wise Men ‘Alive and Cookin’!’
(Austria/Netherlands/Italy)
PORGY & BESS (JAZZ) | 20:30
1010 Vienna, Riemergasse 11
www.porgy.at

Brian Fallon & The Howling Weather (US)
* Dave Hause (US)
ARENA (POP & ALTERNATIVE) | 20:00
1050 Vienna, Baumgasse 80
www.arena.co.at

Toto
GASOMETER (POP & ALTERNATIVE) | 20:00
1110 Vienna, Gugglasse 8
www.planet.tt

The Doors Experience
SZENE (POP & ALTERNATIVE) | 20:00
1110 Vienna, Hauffgasse 26
www.planet.tt

OPERA & MUSICAL

Pelléas et Mélisande
By Claude Debussy
Conductor Thomas Guggeis
Directed by Thomas Jonigk
KAMMEROPER | 19:00
1010 Vienna, Fleischmarkt 24
www.theater-wien.at

La Traviata
Opera by Giuseppe Verdi
VOLKSOPER | 19:00
1090 Vienna, Währingerstraße 78
www.volksoper.at

Macbeth
By Giuseppe Verdi
Conductor Giampolo Maria Bisanti
With Zeljko Lucic, Jongmin Park, Tatiana Serjan,
Jinxu Xiahou
WIENER STAATSSPER | 19:00
1010 Vienna, Opernring 2
www.wiener-staatsoper.at

I Am From Austria
Musical with songs by Rainhard Fendrich
RAIMUNDTHEATER | 19:30
1060 Vienna, Wallgasse 1
www.musicalvienna.at

Tanz der Vampire
Musical by Michael Kunze and
Jim Steinman
RONACHER | 19:30
1010 Vienna, Seilerstätte 9
www.musicalvienna.at

Please note that all theatre performances are in German.
People & Places

DIVERSE

& UNITED
Anna Kulikova, a radiologist from Bishkek, Kyrgyzstan, has won the Invest in the Youth grant to attend ECR 2018. This everyday wonder woman, who works three jobs at home, explained why she will be the only guest from her country to participate in the meeting.

"I’m proud and happy to be part of ECR 2018, even if I’m the only delegate from Kyrgyzstan. Winning the Invest in the Youth grant is really motivating and I am very happy," said Kulikova, who works in the radiology department at the National Centre of Oncology and Haematology in Bishkek, Kyrgyzstan. Tight financial resources prevent more radiologists from Kyrgyzstan to attend the ECR, she explained.

"I’m a bit sad that our radiologists can’t come. Kyrgyzstan is a very low-income country and monthly income in public hospitals is around €100–120," she said.

Although her family helps her out, Kulikova also works two other jobs, one as a radiologist at the Neomed private hospital and the other as a lecturer at Kyrgyz-Russian Slavic University. Combining so many duties is time-consuming but also a real boost for her career development, she explained. "I really like to work with patients, clinicians and students. My working day is very interesting and dynamic. Every day I try to learn something new."

Kulikova specialises in oncologic imaging and is currently involved in a research project about malignant tumours. Specialising in radiology was an easy decision for her.

"I think I wasn’t have any other choice. I was always good at differential diagnosis. I have a really good visual memory and I like difficult cases. In radiology, I have ample space for professional growth," she said.

At ECR 2018, she will attend the European Excellence in Education programme, and is especially looking forward to The Beauty of Basic Knowledge sessions. "These sessions are easy, interactive and very interesting. I try to use this type of lecturing style in my work with students," she said.

Kulikova has been a regular ECR guest since 2014. She first heard about the meeting in 2012, during the Russian Radiology Congress, and decided to visit the European School of Radiology (ESOR) Asklepios course in Rostov-on-Don a year later. "I was amazed at the high level of organisation of the course and its interesting topics, workshops and great lectures. Participants and professors were very friendly and open-minded, Prof. Paul Parizel and Prof. Valentin Sinitsyn have been my favourite professors ever since. After this experience, I naturally decided to visit ECR 2014," she recalled. That year she met many new friends from all over the world and particularly enjoyed the FAST US and US-guided biopsy workshop.

Kulikova continues to come to Vienna because she is a big ESR fan. "The society does a lot of good things for young radiologists, and it motivates me to attend the meeting. I really like everything about the ECR. When the train arrives at the Austria Center station in the morning, I smile and feel very happy. Every step taken in the Austria Center is special as you are walking in a crowd of radiologists. There are beautiful installations and, of course, the traditional fresh apples in the main hall every year. There are great lectures and professors, books, and an industrial exhibition," she said.

In the future, she hopes that the ESR will reduce registration fees for countries like Kyrgyzstan.

"I’m very appreciative towards ESR and ESOR for all the great opportunities that they provide me and my colleagues. I hope that the ESR can reduce the registration fees for low-income countries one day," she said.
Prof. Marc Dewey from Berlin was invited to ECR 2018 to deliver the Wilhelm Conrad Röntgen Honorary Lecture ‘Value-based radiology; the future is now!’ and received his certificate from ESR President Prof. Bernd Hamm.

Interventional radiology (IR) is a fascinating field, but young physicians get limited opportunities to learn about the tools and procedures that comprise it. To bridge that gap, Prof. Christian Loewe from Vienna and Dr. Maximilian de Bucourt from Berlin (pictured above, fourth from left, surrounded by participants) imagined the Cube, a new workshop where residents and students can get hands-on IR experience. Featuring a vast array of simulators and interactive, the Cube has been at maximum capacity so far. Read an interview with Dr. de Bucourt on the ESR Blog at blog.myESR.org.

The ESR and the Indian Radiological and Imaging Association leadership had a very fruitful meeting yesterday afternoon, where the ESR-IRIA Memorandum of Understanding was renewed for the second time, strengthening further the great relations and cooperation between the two societies. The MoU was signed by Prof. Paul M. Parizel, Chair of the ESR Board of Directors, and Prof. Kunnumal Mohanan, IRIA President.

Interventional radiology (IR) is a fascinating field, but young physicians get limited opportunities to learn about the tools and procedures that comprise it. To bridge that gap, Prof. Christian Loewe from Vienna and Dr. Maximilian de Bucourt from Berlin (pictured above, fourth from left, surrounded by participants) imagined the Cube, a new workshop where residents and students can get hands-on IR experience. Featuring a vast array of simulators and interactive, the Cube has been at maximum capacity so far. Read an interview with Dr. de Bucourt on the ESR Blog at blog.myESR.org.

Prof. Paul M. Parizel, Chair of the ESR Board of Directors, and Dr. Marco Brambilla, President of the European Federation of Organisations for Medical Physics, signed the ESR/EFOMP Memorandum of Understanding, valid for another two years.

Prof. Paul M. Parizel, Chair of the ESR Board of Directors, and Prof. Paolo Ricci, UEMS Section of Radiology President, signed an agreement on ETAP 2.0 (European Training Assessment Programme), which is designed as a certificate of excellence for radiology training departments in Europe and beyond.

The Radiographers Awards were handed over during a formal ceremony by ESR President Prof. Bernd Hamm and EFRS President Dr. Jonathan McNulty. These ESR/EFRS joint awards were bestowed for the first time ever.

The ESR, the Royal College of Radiologists of Thailand and the Radiological Society of Thailand had a friendly and productive meeting yesterday afternoon, signing for the first time a trilateral Memorandum of Understanding that consolidates and strengthens their future partnership.

The leadership of the ESR and the European Federation of Radiographer Societies (EFRS) met yesterday during the ECR to discuss further ways of cooperation.