WELCOME TO MALMÖ !

Dear Colleagues,

We are pleased to welcome you to the Third Malmö Conference on Medical Imaging 2009. The conference is jointly organised by members of current and former research projects supported by the European Commission (EC) Euratom-Radiation Protection Research Programme.

Medical imaging is today an indispensable tool in modern healthcare. In a few years, the field has seen truly exciting advances exemplified by cone-beam/multi-slice computed tomography (CT), positron-emission tomography (PET), tomosynthesis – techniques which facilitate quantitative tomographic imaging – as well as diffusion-weighted magnetic resonance imaging (MRI), functional MRI, improved ultrasound technology etc. A major trend is to merge data and images from complementary techniques (e.g. PET/CT, SPECT/CT, projection X-ray/CT, X-ray/ultrasound). Today, imaging methods can reflect internal anatomy and dynamic body functions as well as cellular and molecular events involved in normal and pathologic processes in a way never seen before.

This conference will concentrate on X-ray and radionuclide imaging.

Tomographic imaging techniques reduce superimposed anatomy and/or uptake in the images and result in higher diagnostic accuracy, more accurate quantification and localisation compared to single projection imaging. Today, there are two trends in tomographic X-ray imaging, CT and tomosynthesis (which can be described as a limited angle tomography). The multislice CT approach has significantly shortened the scan-time and has improved the 3D spatial resolution and the temporal resolution, making it increasingly attractive for a wider range of diagnostic examinations and screening tests – unfortunately often at a price of a relatively high radiation dose. The tomosynthesis technique has the potential to produce 3D information with only a small fraction of the radiation dose needed in CT.

In nuclear medicine/molecular imaging, tomographic imaging is carried out using PET or SPECT mostly used in combination with CT. Due to their natures and high sensitivities, PET and SPECT are clearly the methods of choice for molecular imaging in human subjects. A relatively large number of imaging agents are potentially available for targeting specific biological processes and the field is now developing fast.

Advanced imaging contributes to an improved, faster and cheaper diagnosis and follow up of treatment. It also facilitates a detailed planning of surgery and radiation therapy. In radiation therapy of cancer, the spatial imaging using CT is standard for treatment planning and additional information is now obtained from PET and MRI. New functional and metabolic information will optimise the therapy and tailor it to the individual patient to improve curability and reduce side effects.

The topic of our conference is challenging. Although the benefits of medical X-ray and radionuclide imaging can hardly be overrated, the methods and choice of technical parameters in the imaging process are often still far from optimal. The
issue of radiation protection in medical imaging has attracted significant attention over the past years. It is obvious that CT examinations are responsible for a considerable part of the radiation dose to patients, and therefore considerable efforts have been made during recent years to find methods for reducing the dose and still maintaining the medical information in the images. Careful optimisation of exposure parameters in some investigations has even led to a decrease in patient exposure compared to conventional radiography (e.g. CT of colon).

Optimising the imaging conditions is crucial. To do that, it is important to understand the relation between diagnostic outcome of the imaging procedures and their physical and technical characteristics. In order to use radiation in such a way that sufficient diagnostic information is obtained at the lowest possible radiation dose to the patient, there is a need to advance our understanding of the fundamental physical phenomena of X-ray and radionuclide imaging.

The increasing role of medical imaging procedures in both diagnosis and therapy requires a supply of suitably trained scientific staff. This is necessary for an adequate support of the ongoing technological changes in healthcare and crucial for research, innovations and new creative applications.

This conference will cover a wide area of research: from traditional radiographic technologies to advanced methods for the evaluation of image quality and patient exposure with special emphasis on the development and evaluation of optimisation strategies.

We do hope that this conference, representing a continuation of a series of successful EC-meetings in the field of Medical Imaging, will contribute to the consolidation of the scientific premises to effectively use diagnostic X-rays and radioactive tracers with optimised image qualities and exposure levels.

Malmö, Munich and Göteborg, 7 June, 2009

Sören Mattsson  Christoph Hoeschen  Lars Gunnar Månsson  Anders Tingberg
Meeting place for all events:

"Aulan", Clinical Research Centre (CRC), Entrance 72, Malmö University Hospital, Malmö, Sweden
Telephone +46 40 391010 or +46 (0)40 391000
Fax +46 (0)40 391012

Organising committee:

Telephone +46 (0)40 33 12 35
Fax +46 (0)40 96 31 85
Mobile phones: +46 (0)706 491 960 (Kristina Berndtson)
+46 (0)768 870 451 (Christian Bernhardsson)
+46 (0)707 234 992 (Anders Tingberg)
+46 (0)705 171 374 (Sören Mattsson)
e-mail imaging@med.lu.se
soren.mattsson@med.lu.se
anders.tingberg@med.lu.se

Other telephone numbers:

Taxi Skåne +46 (0)40 330330
Taxi 97 +46 (0)40 979797
Limhamns Taxi +46 (0)40 150000

Astoria Hotell +46 (0)40 786 60
Hilton Malmö City +46 (0)40 6934757
Hotell Plaza +46 (0)40 33 05 50
IBIS Hotell +46 (0)40 6728570
Quality Hotell Konserthuset +46 (0)40 6646030
StayAt Malmo Mazetti +46 (0)40 6413000
STF Vandrarhem (Youth Hostel) +46 (0)40 82220
Teaterhotellet +46 (0)40 6655800
### Local Organising Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anders Tingberg, chair</td>
<td>Malmö</td>
</tr>
<tr>
<td>Sigrid Leide-Svegborn, co-chair</td>
<td>Malmö</td>
</tr>
<tr>
<td>Kristina Berndtson</td>
<td>Malmö</td>
</tr>
<tr>
<td>Christian Bernhardsson</td>
<td>Malmö</td>
</tr>
<tr>
<td>Magnus Båth</td>
<td>Göteborg</td>
</tr>
<tr>
<td>Daniel Fornvik</td>
<td>Malmö</td>
</tr>
<tr>
<td>Augusto Giussani</td>
<td>Neuherberg/Munich</td>
</tr>
<tr>
<td>Mikael Gunnarsson</td>
<td>Malmö</td>
</tr>
<tr>
<td>Kerstin Hyberg-Svensson</td>
<td>Malmö</td>
</tr>
<tr>
<td>Sören Mattsson</td>
<td>Malmö</td>
</tr>
<tr>
<td>Mats Nilsson</td>
<td>Malmö</td>
</tr>
<tr>
<td>Tony Svahn</td>
<td>Malmö</td>
</tr>
<tr>
<td>Marie Sydoff</td>
<td>Malmö</td>
</tr>
<tr>
<td>Marcus Söderberg</td>
<td>Malmö</td>
</tr>
<tr>
<td>Pontus Timberg</td>
<td>Malmö</td>
</tr>
<tr>
<td>Helena Uusijärvi</td>
<td>Malmö</td>
</tr>
<tr>
<td>Sven Valind</td>
<td>Malmö</td>
</tr>
</tbody>
</table>

### Scientific Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sören Mattsson, chair</td>
<td>Malmö</td>
</tr>
<tr>
<td>Christoph Hoeschen, co-chair</td>
<td>Neuherberg/Munich</td>
</tr>
<tr>
<td>Diana Adlienè</td>
<td>Kaunas</td>
</tr>
<tr>
<td>Gudrun Alm Carlsson</td>
<td>Linköping</td>
</tr>
<tr>
<td>Anja Almén</td>
<td>Stockholm</td>
</tr>
<tr>
<td>Ingvar Andersson</td>
<td>Malmö</td>
</tr>
<tr>
<td>Magnus Båth</td>
<td>Göteborg</td>
</tr>
<tr>
<td>Marie Claire Cantone</td>
<td>Milan</td>
</tr>
<tr>
<td>Dev Chakraborty</td>
<td>Pittsburgh</td>
</tr>
<tr>
<td>Neal Clinthorne</td>
<td>Ann Arbor</td>
</tr>
<tr>
<td>Mats Danielsson</td>
<td>Stockholm</td>
</tr>
<tr>
<td>Gernot Ebel</td>
<td>Göttingen</td>
</tr>
<tr>
<td>Keith Faulkner</td>
<td>Newcastle</td>
</tr>
<tr>
<td>Sören Holm</td>
<td>Copenhagen</td>
</tr>
<tr>
<td>Peter Leander</td>
<td>Malmö</td>
</tr>
<tr>
<td>Michael Ljungberg</td>
<td>Lund</td>
</tr>
<tr>
<td>Marko Mikuž</td>
<td>Ljubljana</td>
</tr>
<tr>
<td>Michael Moores</td>
<td>Liverpool</td>
</tr>
<tr>
<td>Lars Gunnar Månsson</td>
<td>Göteborg</td>
</tr>
<tr>
<td>Mats Nilsson</td>
<td>Malmö</td>
</tr>
<tr>
<td>Magdalena Rafecas</td>
<td>Valencia</td>
</tr>
<tr>
<td>Michael Sandborg</td>
<td>Linköping</td>
</tr>
<tr>
<td>Arne Skretting</td>
<td>Oslo</td>
</tr>
<tr>
<td>Anders Tingberg</td>
<td>Malmö</td>
</tr>
<tr>
<td>Eliseo Vañó</td>
<td>Madrid</td>
</tr>
<tr>
<td>Francis R Verdun</td>
<td>Lausanne</td>
</tr>
<tr>
<td>Per Wollmer</td>
<td>Malmö</td>
</tr>
<tr>
<td>Maria Zankl</td>
<td>Neuherberg/Munich</td>
</tr>
</tbody>
</table>

---

**Financial support was given by:**

- Helmholtz Zentrum Munchen, German Research Center for Environmental Health, Neuherberg/Munich
- King Gustaf V Jubilee Clinic Cancer Research Foundation, Göteborg
- Lund University, Malmö
- Malmö University Hospital, Malmö
- Swedish Radiation Safety Authority, Stockholm
Commercial Exhibitors

Eizo Europe AB
Lövängen 12, SE-194 45 Upplands Väsby
www.eizo.se

Krucom AB
Stortorget 4, SE-222 23 Lund
www.krucom.com

MacSupport
Baltzargatan 18, SE-211 36 Malmö
info.syd@macsupport.se

Olorin AB
Marios gata 11, SE-434 37 Kungsbacka
www.olorin.com

Philips Healthcare
Knarrarnäsgatan 7, Kista entré, SE-164 85 Stockholm
www.philips.se

PTW
Physikalisch-Technische Werkstätten
Loerracher Str. 7, DE-79115 Freiburg, Germany
www.ptw.de

Radeq
Ekhöjden, SE-743 91 Storvreta
www.radeq.com

RTI Electronics AB
Flöjelbergsgatan 8 C, SE-431 37 Mölndal
www.rti.se

SHARPVIEW
Storgatan 39, SE-582 23 Linköping
www.sharpview.se

Siemens AB
Johanneslundsvägen 12 – 14, SE-194 87 Upplands Väsby
www.siemens.se/medical
PROGRAMME

Meeting place for all events: Main lecture hall "Aulan", Clinical Research Centre (CRC), Entrance 72, Malmö University Hospital, Malmö, Sweden

Time |
--- |
**WEDNESDAY 24/6, 2009** |
| **17.00-19.00** |
| Registration |
| **19.00** |
| Get-together party at Clinical Research Centre. Live jazz music. |

Time |
--- |
**THURSDAY 25/6, 2009** |
| **08.00-08.30** |
| Registration |

**Conference opening**

08.30  Welcome to the Third Malmö Conference on Medical Imaging  
Sören Mattsson

**Official opening**  
Bo Ahrén, Dean, Faculty of Medicine, Lund University and Ann-Sofi Bennheden, Director of Malmö University Hospital

**Introduction to the conference**  
Anders Tingberg

**Session 1:**  
**Setting the scene**  
Chair: Sören Mattsson  
Co-chair: Christoph Hoeschen

09.00  **Invited lecture:**  
92. Trends in medical imaging  
Andrew D A Maidment (Philadelphia)

09.30  **Invited lecture:**  
61. Medical visualisation tools must be based on medical user requirements  
Anders Persson (Linköping)

10.00  **Coffee/tea and fruit**

10.30  **Invited lecture:**  
101. Future in imaging with focus on nuclear medicine  
Katrine Åhlström Riklund (Umeå)
Session 2:  
Session dedicated to the memory of Robert F Wagner  
Assessment of clinical images  
Chair: Andrew D A Maidment  
Co-chair: Lars Gunnar Månsson  
(Both given and family names are indicated for the presenting author)

11.00 Invited lecture:  
2. Clinical relevance of the ROC and FROC paradigms for measuring imaging system effectiveness  
Dev P Chakraborty (Pittsburgh)

11.30 Invited lecture:  
76. Evaluating imaging systems – practical applications  
Magnus Båth (Göteborg)

12.00 LUNCH

13.00 74. Variations in eye contrast sensitivity when viewing medical images  
Patrik Sund, M Båth, L G Månsson (Göteborg)

13.15 75. ViewDEX – an efficient and easy-to-use software for observer performance studies  
Markus Håkansson, S Svensson, S Zachrisson, A Svalkvist, M Båth, L G Månsson (Borås and Göteborg)

13.30 63. Consistency of methods for analysing location-specific data  
Federica Zanca, D P Chakraborty, G Marchal, H Bosmans (Leuven and Pittsburgh)

13.45 20. Improved method of simulating dose reduction for digital radiographic systems  
Angelica Svalkvist, M Båth (Göteborg)

14.00 Invited lecture:  
3. A status report on free-response receiver operating characteristic (FROC) analysis  
Dev P Chakraborty (Pittsburgh)

14.30 Coffee/tea and fruit
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors/Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.00</td>
<td>99. Low-dose computed tomography in adolescent idiopathic scoliosis</td>
<td>Kasim Abul-Kasim (Malmö)</td>
</tr>
<tr>
<td>15.15</td>
<td>91. Post-processing image filtration enabling dose-reduction in standard abdominal CT</td>
<td>Peter Leander, M Gunnarsson, M Söderberg, I Albertsson (Malmö and Linköping)</td>
</tr>
<tr>
<td>15.30</td>
<td>13. Some discrepancy between phantom-estimated and patient’s absorbed dose in head CT examinations</td>
<td>S Mockevičienė, Diana Adlienė (Kaunas)</td>
</tr>
<tr>
<td>15.45</td>
<td>18. Criteria for establishing the shielding of multi-detector computed tomography (MDCT) rooms</td>
<td>Francis R Verdun, A Aroua, S Beachler, FO Bochud (Lausanne)</td>
</tr>
<tr>
<td>16.00</td>
<td>46. A phantom investigation of tumour signal and noise in PET reconstructions with various smoothing filters</td>
<td>Arne Skretting, O Glomset, TV Bogsrud (Oslo)</td>
</tr>
<tr>
<td>16.15</td>
<td>35. Uncertainty and sensitivity analysis of biokinetic models for radiopharmaceuticals</td>
<td>W B Li, Christoph Hoeschen (Neuherberg/Munich)</td>
</tr>
<tr>
<td>16.45</td>
<td>Invited lecture:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>77. Radiation exposure of patients and personnel from a PET/CT-procedure</td>
<td>Sigrid Leide-Svegborn (Malmö)</td>
</tr>
<tr>
<td>17.15</td>
<td>Presentation by exhibitors (Chair: Anders Tingberg)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refreshments</td>
<td></td>
</tr>
<tr>
<td>18.45</td>
<td>Introduction to poster session A (Magnus Båth and Francis R Verdun)</td>
<td></td>
</tr>
</tbody>
</table>
19.00-20.30

**Poster session A and sandwiches/buffé**
(Authors are expected to be present at their posters)

27. Liquid radiation detectors based on nanosilver surface plasmon resonance phenomena  
*Judita Puišo, J Laurikaitienė, I Prosyčėvas* (Kaunas)

44. Exposure requirements for contrast detection by projection radiography  
*FH Schöfer, Christoph Hoeschen* (Neuherberg/Munich)

8. Does a flat-panel detector reduce the patient radiation dose in interventional cardiology?  
*Octavian Dragusin, R Breisch, C Bokou, J Beissel* (Luxembourg)

64. Optimisation of beam quality for conventional urography using a Gd$_2$O$_2$S:Tb flat panel detector  
*S Zachrisson, J Hansson, Å Cederblad, K Geterud, Magnus Båth* (Göteborg)

16. Use of the quasi-ideal observer model in the framework of mammography quality control  
*P Monnin, F Bochud, Francis R Verdun* (Lausanne)

17. How reliable can be an automatic MTF and low contrast detectability assessment in CT when varying acquisition parameters?  
*F Mieville, S Beaumont, F Gudinchet, Francis R Verdun* (Lausanne and La Roche sur Yon)

31. Evaluation of subjective assessment of the low-contrast visibility in constancy control of computed tomography  
*Anne Thilander-Klang, K Ledenius, J Hansson, P Sund, M Båth* (Göteborg)

7. The simulation of 3D objects into breast tomosynthesis images  
*Eman Shaheen, F Zanca, F Sisini, G Zhang, K Smans, J Jacobs, H Bosmans* (Leuven)

96. A Monte Carlo based model for simulation of digital chest tomosynthesis  
*Gustaf Ullman, D Dance, M Sandborg, G Alm Carlsson, A Svalkvist, M Båth* (Linköping and Göteborg)

86. The effect of reduced breast compression in breast tomosynthesis: an observer study using clinical cases  
*Daniel Förnvik, I Andersson, T Svahn, P Timberg, S Zackrisson, A Tingberg* (Malmö)
28. Monte Carlo simulations of the dosimetry of chest tomosynthesis
Angelica Svalkvist, S Zachrisson, L G Månsson, M Båth (Göteborg)

43. Effective dose to patients from chest examinations with tomosynthesis
Alexa von Wrangel, A Svalkvist, H Risman-Olsson, Å Cederblad, M Båth (Göteborg)

9. Cu filtration for dose reduction in neonatal chest imaging
Kristien Smans, L Struelens, F Vanhavere, H Bosmans (Mol and Leuven)

11. Role of digital technologies in the decrease of radiation risks in X-ray diagnostics
Yuriy Kovalenko, S Miroshnichenko (Kiev)

10. Correction for the fields in boost irradiation and irradiation of recurrences of brain tumours with the aid of SPECT $^{99m}$Tc-MIBI scintigraphy
O Butrim, Oksana Kozak, V Kozak (Kiev)

25. Investigation of radioiodine biokinetics with a population kinetics approach
Tilman Janzen, A Giussani, C Canzi, P Gerundini, U Oeh, C Hoeschen (Neuherberg/Munich and Milan)

107. A technique for on-site measurement of spatial resolution in PET images
Arne Skretting (Oslo)

68. Absolute quantification of activity content in PET images using the Philips Gemini TF PET/CT System
Marie Sydoff, H Uusijärvi, S Leide-Svegborn, S Mattsson (Malmö)

106. Biokinetics of $^{18}$F-choline studied in four patients
Helena Uusijärvi, L-E Nilsson, A Bjartell, S Leide-Svegborn and S. Mattsson (Malmö)

105. Preliminary compartment model for biokinetics of $^{18}$F-choline
Tilman Janzen, F Tavola, A Giussani, MC Cantone, I Veronese, H Uusijärvi, S Mattsson, C Hoeschen (Neuherberg/Munich, Milano and Malmö)

14. New calculations for internal dosimetry of beta-emitting radiopharmaceuticals
Maria Zankl, N Petoussi-Henss, H Schlattl, WB Li, A Giussani, C Hoeschen (Neuherberg/Munich)

57. Internal dose assessment of $^{99m}$Tc–HTOC
Zhang Jianfeng (Beijing)
FRIDAY 26/6, 2009

Session 4:
Recent technological developments and their clinical impact
Chair: Diana Adlienè
Co-chair: Thomas Mertelmeier

08.30 Invited lecture:
93. Detectors for the future of X-ray imaging
Magnus Åslund (Stockholm)

09.00 Invited lecture:
87. Phase-contrast and dark-field imaging for improved contrast in medical X-ray diagnostics
Franz Pfeiffer, T Donath, O Bunk, C David, M Bech, T Jensen, E Hempel, T Weitkamp, G Le Duc, A Bravin (Garching, Villigen, Copenhagen, Forchheim and Grenoble)

09.30 30. Development of molecular phase-contrast X-ray stereoscopic imaging for accurate cancer diagnostics
Shu-Ang Zhou, A Brahme (Stockholm)

09.45 66. Dual-energy imaging with photon-counting silicon detectors
Erik Fredenberg, M Hemmendorff, B Cederström, M Lundqvist, M Åslund, M Danielsson (Stockholm and Solna)

10.00 Coffee/tea and fruit

10.30 41. Development of a multi-spectral, multi-geometry computational model for x-ray breast imaging
Nico Buls, I Wathion, L Mommaerts, C Breucq, J de Mey (Brussels)

10.45 83. Microdosing using AMS and PET for early biokinetic studies of pharmaceutical candidates in man
Kristina Stenström, M Sydoff (Lund and Malmö)

Session 5:
Imaging in radiotherapy
Chair: Dev P Chakraborty
Co-chair: Sigrid Leide-Svegborn

11.00 Invited lecture:
55. If you can’t see it, you can’t hit it: The role of biomedical imaging in radiation oncology
Wolfgang Schlegel (Heidelberg)
11.30 40. Semi-automatic tumour segmentation by selective navigation in a 3-parameter volume, obtained by voxel-wise kinetic modelling of $^{11}$C-acetate
Ida Häggström, L Johansson, A Larsson, N Östlund, J Sörensen, M Karlsson (Umeå and Uppsala)

11.45 LUNCH

Session 6:
Tomosynthesis
Chair: Madan M Rehani
Co-chair: Ingvar Andersson

12.45 Invited lecture:
90. X-ray tomosynthesis – A new diagnostic modality
Anders Tingberg (Malmö)

13.15 48. Overview of two years of clinical experience of chest tomosynthesis at Sahlgrenska University Hospital
Jenny Vikgren, ÅA Johnsson, A Svalkvist, S Zachrisson, A Flinck, M Boijsen, S Kheddache, LG Månsson, M Båth (Göteborg)

13.30 84. Simulation of lung nodules for nodule detection studies in chest tomosynthesis
Angelica Svalkvist, M Håkansson, G Ullman, M Båth (Göteborg, Borås and Linköping)

13.45 15. A phantom study of nodule size evaluation with chest tomosynthesis and MDCT
ÅA Johnsson, A Svalkvist, Jenny Vikgren, M Boijsen, A Flinck, S Kheddache, M Båth (Göteborg)

14.00 50. Development and optimization of the maximum-likelihood-approach for image reconstruction in digital breast tomosynthesis
A Anane, Thomas Mertelmeier (Erlangen)

14.15 71. Main features of data geometry required for the tomographic reconstruction algorithm OPED
Oleg Tischenko, Y Xu, C Hoeschen (Neuherberg/Munich and Eugene)

14.30 88. Breast tomosynthesis. Clinical experience
Ingvar Andersson, D Förmvik, T Svahn, A Tingberg, P Timberg, S Zackrisson, S Mattsson (Malmö)

14.45 85. In-plane visibility of lesions using breast tomosynthesis
Pontus Timberg, T Svahn, I Andersson, D Förmvik, B Hemdal, S Mattsson, M Båth, A Tingberg, M Ruschin (Malmö, Göteborg and Toronto)
15.00 70. Comparing the diagnostic accuracy of dual-view digital mammography and a dual-view combination of breast tomosynthesis and digital mammography in a free-response observer performance study
Tony Svahn, I Andersson, S Zachrisson, S Svensson, P Timberg, D Förnvik, A Tingberg, D Ikeda, S Mattsson, D Chakraborty (Malmö, Göteborg, Stanford and Pittsburgh)

15.15 Coffee/tea and fruit

Session 7:
Radiation Safety in Medicine
Chair: Dieter Regulla
Co-chair: Michael Moores

15.45 Invited lecture:
1. Radiation protection in newer imaging technologies
Madan M Rehani (IAEA and ICRP)

16.15 56. Patient doses in interventional cardiology in Bosnia and Herzegovina
Adnan Beganović, L Lincender, M Spužić, M Kulić, M Gazdić-Šantić, A Skopljak-Beganović, A Drljević, S Džanić, B Bašić (Sarajevo)

16.30 53. Studies of patient doses in interventional radiological examinations
Svetlana Sarycheva, M Balonov, V Golikov, S Kalnicky (St.Petersburg)

16.45 82. Are exposure index values consistent in clinical practice? A multimanufacturer investigation.
Marie-Louise Butler, L Rainford, J Last, PC Brennan (Dublin and Sydney)

17.00 67. Image rejects – Radiographic challenges
Dag Waaler, B Hoffmann (Gjøvik)

17.15 22. Survey of computed tomography doses in the republic of Belarus
Siarhei A Kharuzhyk, S A Matskevich, A E Flijustin, E V Bogushevich, S A Ugolkova (Minsk, Gomel and Vitebsk)

17.30 34. Patient peak skin doses from cardiac interventional procedures
Dejan Ţontar, D Kuhelj, D Škrk, U Zdešar (Ljubljana)

17.45 100. Recent international developments within automated collection and distribution of estimated patient radiation exposures
Jonathan Kruger (Lund)

18.00-18.15 Invited lecture:
108. Current exposures in diagnostic radiology – time to consider potential impact on radiation protection, epidemiology and biology
Dieter Regulla and C Hoeschen (Neuherberg/Munich)

19.30 Conference Dinner at the City Hall
SATURDAY 27/6, 2009

Session 8:
QA, QC, Mammography, interventional, CT, dental, paediatric, reference doses
Chair: Keith Faulkner
Co-chair: Maria Zankl

08.30 Invited lecture
26. Efficient quality assurance programs in radiology and nuclear medicine
Michael Sandborg, A Gustafsson, J Nilsson Althen (Linköping)

09.00 Invited lecture
4. A clinical audit programme for diagnostic radiology. The approach adopted by the International Atomic Energy Agency

09.15 Invited lecture
5. Web based tools for quality assurance and radiation protection in diagnostic radiology
B Michael Moores, P Charnock, M Ward (Liverpool)

09.30 51. X-ray beam quality test inversed from a digital X-ray image
Lada Bumbure, Y Dekhtyar, T Kirsanova, K Stalidzane (Riga)

09.45 33. Recently revised DRLs in nuclear medicine in Bulgaria and in Finland
Helinä Korpela, R Bly, J Vassileva, K Ingilizova, T Stoyanova, I Kostadinova, A Slavchev (Helsinki and Sofia)

10.00 Coffee/tea and fruit

10.30 45. Relationship between noise and sharpness in in-plane CT-images for different reconstruction kernels
Kristine Eldevik, W Nordhøy, A Skretting (Oslo)

10.45 23. Application of Statistica for analysis of large patient dose data sets obtained from RIS
Jason Fazakerley, P Charnock, R Wilde, R Jones, M Ward (Liverpool)

11.00 38. Innovative method for objective evaluations of the quality of CT systems
Alexander Schegerer, C Brunner, H Schlattl, B Renger, W Dietz, C Hoeschen (Neuherberg and Munich)
11.15 59. The effect of different adaptation strengths on image quality and radiation dose using Siemens CARE Dose 4D
Marcus Söderberg, M Gunnarsson (Malmö)

11.30 42. Methods for monitoring patient dose in dental radiology
Ebba Helmrot, A Thilander-Klang (Linköping and Göteborg)

11.45 32. How to use effective dose in dental radiology?
Anne Thilander-Klang, E Helmrot (Göteborg and Linköping)

12.00 Introduction to poster session B (Michael Sandborg and Helena Uusijärvi)

12.15 **LUNCH and Poster session B**
(Authors are expected to be present at their posters)

47. Quality Control in a conventional X-ray laboratory - routine application of theoretical spectra
Jacob Nøtthellen, E Bilet (Oslo)

Julius Žiliukas, A Urbonienė, L Krynke (Vilnius)

98. Forward-scattered radiation from the compression paddle should be included when average glandular dose is estimated
Bengt Hemdal (Malmö)

58. The role of the resulting skin dose in complex mammography screening examinations
Inga Cibulskaitė, D Adliene, J Laurikaitiene, G Adlys (Kaunas)

6. Quality assurance of micro-CT systems
Liesbeth Eloot, N Buls, I Willekens, T Lahoutte, J de Mey (Brussels)

49. Comparison of organ doses and image quality between CT and Fluoro-CT scans in orthopedic applications
J Damet, M Sans-Merce, F Miéville, S Duc, Francis R Verdun, S Baechler (Lausanne and Geneva)

65. The effect of radiation dose reduction on clinical image quality in chest radiography of premature neonates using a dual-side readout technique computed radiography system
Anna Carlander, J Hansson, J Söderberg, K Steneryd, M Båth (Göteborg and Varberg)
73. Evaluation of three methods for determining CT dose profile – Presenting the Tritium method  
Jonny Hansson, S Eriksson, A Thilander-Klang, M Båth (Göteborg)

36. Evaluation of image enhanced paediatric CT brain examinations  
Kerstin Ledenius, F Stålhammar, L-M Viklund, C Fredriksson, A Forsberg, A Thilander-Klang (Göteborg and Linköping)

60. Simulated dose reduction by adding virtual noise to measured raw data – a validation study  
Marcus Söderberg, M Gunnarsson, M Nilsson (Malmö)

54. Comparison of dose area product values for CAG examinations over a period of 10 year in a hospital in the Netherlands. The influence of parameter settings on the DAP values  
Willy Hummel (Leeuwarden)

62. Harmonization of the appearance of digital radiographs from different vendors by means of common external image processing  
Lars Larsson, E-L Engman, M Båth, L G Månsson (Skövde, Göteborg and Linköping)

78. Quality control and patient dosimetry in dental cone beam CT  
Jenia Vassileva, D Stoyanov (Sofia)

97. Comparison of image quality in Siemens Sensation 64 slice and 16-slice multidetector CT of wrists with metallic implants  
L Hörberg, L Ekelund, Mikael Gunnarsson (Malmö)

12. Complex X-ray-ultrasonic examination as the way of reduction of dose exposure on the patient at the stage of primary diagnostics  
Yulia Mironova, L Urina (Simferopol and Kiev)

29. Ten years of occupational exposure monitoring in Bosnia and Herzegovina  
B Bašić, Adnan Beganović, D Samek, A Skopljak-Beganović (Sarajevo)

81. Mammography practice in Serbia: evaluation and optimisation of image quality and technical aspects of mammography imaging chain  
D Kosutic, Olivera Ciraj-Bjelac, D Arandjic (Belgrade)

102. A phantom study to show the importance of compression in conventional diagnostic X-ray examinations  
Marie-Louise Olsson, A Tingberg, S Mattsson (Malmö)

103. Comparison of different detectors in X-ray equipment using Intulo a radiation dose-management system  
Marie-Louise Olsson, A Tingberg, M Nilsson (Malmö)
14.30  Coffee/tea and fruit

Session 9:  
Optimisation in digital radiology and nuclear medicine  
Chair: Anne Thilander-Klang  
Co-chair: Anders Tingberg

15.00  37. Optimisation of effective dose and image quality in colon examinations  
Karin Berner, M Båth, P Jonasson, J Cappelen-Smith, P Fågelstam, J Söderberg (Uppsala, Göteborg and Varberg)

15.15  52. Determination of the detective quantum efficiency of gamma camera systems: a Monte Carlo study  
Ida Eriksson, S-Å Starck, M Båth (Karlstad, Jönköping and Göteborg)

15.30  19. Fluoroscopy-guided procedures in cardiology: are we reducing patient exposure over time?  
Eleni-Theano Samara, A Arouna, J C Stauffer, F Bochud, FR Verdun (Lausanne)

15.45  89. A European study of patient dosimetry in diagnostic radiology – protocol development and findings  
H Gfirtner, PA Kaplanis, B Michael Moores, P Schneider, J Vassileva (Neuburg/Inn, Nicosia, Liverpool, Fulda and Sofia)

16.00  72. A practical approach to prioritise optimisation of radiological examinations - Introducing the 4-bit concept  
Jonny Hansson, P Jonasson, P Sund, LG Månsson, M Båth (Göteborg)

16.15  Invited lecture  
104. Minimizing Activity and Dose with Enhanced Image quality by Radiopharmaceutical Administrations (MADEIRA)  
Christoph Hoeschen, S Mattsson, MC Cantone, M Mikuz, C Lacasta, G Ebel, N Clinthorne, A Giussani (Neuherberg, Malmö, Milano, Ljubljana, Valencia, Göttingen, Ann Arbor)

16.30-17.00  Summary and highlights of the conference  
Poster awards and Young Scientists award