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A welcome note from the conference chairpersons

It is our pleasure to welcome you to ESTRO 31. At the ESTRO 31 Conference the most up-to-date evidence in clinical, physics, radiobiology and oncology science and technology will be presented, and a broad portfolio of educational opportunities will be provided. Life in the ESTRO house will also be enlightened by special interdisciplinary sessions which will jointly address relevant topics for radiation oncologists, physicists, radiobiologists and RTTs in the same forum, allowing each discipline to enrich their knowledge base.

Symposia and debates are foreseen on new evidences - for the more common tumors and for the challenging unusual clinical presentations - as well as in biology, imaging, physics and technology. This includes the integration of molecular and genetic prediction of tumour and normal tissue response, the combination of radiation therapy with new and more efficient molecular targeted drugs, a more extensive use of particle therapies to better spare normal tissues, a complete integration of 4D image guided treatments, the development of adaptive radiation therapy to the most active part of the tumors as defined by functional imaging and the curative use of stereotactic radiotherapy. All these advances challenge machine and patient specific QA and dosimetry as well as the training and practice of radiation technologists.

ESTRO 31 will start with a series of pre-meeting courses which will be followed by an opening ceremony in the evening.

After the great success of contouring workshops at ESTRO 29 in Barcelona, we continue with this initiative and offer workshops daily from Thursday - Sunday.

As in previous conferences, ESTRO 31 offers an additional Young Scientists Track on Friday, 11 May. This track is fully organized by our young members and it enables them to share common interests.

With the increasing number of abstract submissions for ESTRO conferences, we made a special effort to give maximum visibility for the abstracts. We have decided to limit the number of posters displayed at the conference venue to around 500 top scoring abstracts. We feel that this will allow you to easily browse the topics of most interest. In addition to the traditional posters displayed on site, we have introduced 12 poster discussion sessions where displayed posters, grouped around a topic, will be discussed in detail by a chairperson. We hope that these changes will facilitate networking between professionals working on the same or similar topics. The remaining abstracts (E-posters) are available for viewing in special electronic poster viewing stations available during the whole conference.

All of the leading exhibitors will contribute to ESTRO 31, Europe’s largest industrial exhibition in radiation oncology, offering the opportunity to view the latest products and services in cancer treatment and cancer care.

Sincerely,

Vincenzo Valentini & Núria Jornet
Chairpersons of the Scientific Programme Committee
Organising Committees

SCIENTIFIC PROGRAMME COMMITTEE
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Organising Committees

NATIONAL ORGANISING COMMITTEE

CHAIRS: Alfredo Ramos Aguerri, Hospital Ramon y Cajal, Getafe and Carles Muñoz Montplet, Institut Català d’Oncologia, Girona-Barcelona

MEMBERS: Antonio Arellano Tolivar, Hospital Germans Trias i Pujol, Badalona; Roberto Berenguer Serrano, Complejo Hospitalario Universitario de Albacete, Albacete; Sonia Bermejo, Hospital de la Santa Creu i Sant Pau, Barcelona; Felipe A. Calvo, Hospital General Universitario Gregorio Marañon, Madrid; Pablo Carrasco de Fez, Hospital de la Santa Creu i Sant Pau, Barcelona; Enrique de Sena Espinel, Hospital Universitario de Salamanca, Salamanca; Maria A. Duch, Universitat Politècnica de Catalunya, Barcelona; Núria Farré Bernadó, Hospital de la Santa Creu i Sant Pau, Barcelona; Pedro Fernández Letón, Hospital Universitario Madrid Sanchinarro, Madrid; Pedro Galán Montenegro, Hospital Regional Universitario Carlos Haya, Málaga; Alejandro García Romero, Hospital Clínico Universitario Lozano Blesa, Zaragoza; Jordi Giralt, Hospital Universitario Vall d’Hebron, Barcelona; Antonio Gómez Caamaño, Hospital Clínico de Santiago, Santiago de Compostela; Ferran Guedea, Institut Català d’Oncologia, Barcelona; Manuel Hernández Herrera, Hospital Meixoeiro, Vigo; Ismael Herruzo Cabrera, Hospital Universitario Carlos Haya, Málaga; Ana Mañas, Hospital Universitario La Paz, Madrid; Rafael Martínez-Monge, Clínica Universitaria de Navarra, Pamplona; Ignasi Modolell i Farré, Institut Català d’Oncologia l’Hospitalet, Barcelona; Victor Manuel Muñoz Garzón, Hospital Meixoeiro-CHUVI, Vigo; José Manuel Ordiales Solís, Hospital de Mérida, Mérida; Amalia Palacios Eito, Hospital Universitario Reina Sofía, Córdoba; Santiago Pellejero Pellejero, Hospital de Navarra, Pamplona; Luis Alberto Perez Romasanta, Hospital General de Ciudad Real, Ciudad Real; Miguel Pombar, Hospital Clínico Universitario de Santiago, Santiago de Compostela; Moisés Sáez Beltran, Hospital Universitario de Fuenlabrada, Fuenlabrada; Pedro Sánchez Galiano, Hospital Universitario Central de Asturias, Oviedo; Waldo Sanjuanbenito Ruiz de Alda, Hospital Universitario de San Juan, Alicante

General Information

ACCOMMODATION & CITY TOURS

Pacific World is the official accommodation agent for ESTRO 31/World Congress of Brachytherapy and will operate an accommodation desk in the Registration area on:

- Tuesday > 16.00 – 18.00
- Wednesday > 09.00 – 19.00
- Thursday > 09.00 – 18.00
- Friday > 09.00 – 18.00
- Saturday > 09.00 – 18.00
- Sunday > 09.00 – 14.00

ACCREDITATION

ESTRO 31 is accredited by the European Accreditation Council for Continuing Medical Education (EACCME) to provide the following CME activity for medical specialists. The EACCME is an institution of the European Union of Medical Specialists (UEMS), www.uems.net.

ESTRO 31 is designated for a maximum of (or ‘for up to’) 21 hours of European external CME credits. Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the European Union of Medical Specialists and the American Medical Association, physicians may convert EACCME credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME credit to AMA credit can be found at www.ama-assn.org/go/internationalcme.

Live educational activities, occurring outside of Canada, recognized by the UEMS-EACCME for ECMEC credits are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Program of The Royal College of Physicians and Surgeons of Canada.

BADGES

Upon registration you will receive a personal name badge. Participants are kindly requested to wear this badge when attending scientific sessions and/or social events.

CERTIFICATES

Certificates of attendance will be issued as of Friday, May 11 through the designated stations in the registration area. Certificates of attendance can also be downloaded online until 3 months after the event.
General Information

CURRENCY
The currency in Spain is the EURO.

E-POSTER CORNERS
2 electronic poster corners in the exhibition area and 1 in the poster area will be available during opening hours of the exhibition for all participants.

EXHIBITION
An exhibition featuring equipment and medical publishers will be held in the Exhibition area. The opening of the exhibition will be on Thursday 9 May, 2012 at 19.15. The exhibition will remain open from Friday 10 May to Saturday 12 May between 9:30 and 17:00. Entrance is free for all registered participants and accompanying persons.

GENERAL ASSEMBLY
On Saturday, 12 May 2012, at 17:30.
All ESTRO members are invited to attend the ESTRO General Assembly.

INSURANCE
The organiser does not accept liability for individual medical, travel or personal insurance. Participants are strongly advised to take out their own personal insurance policies.

INFORMATION FOR ABSTRACT AUTHORS
ESTRO 31 abstracts were considered for the following types of presentations.

- Oral Communication
  Abstract is presented in one of the Proffered Papers sessions. The presenting author is allowed 10 minutes for the presentation, discussion time included.

- Poster Discussion
  During a Poster Discussion session the presenters’ posters are digitally displayed utilizing an LCD machine and screen in a designated zone of the Poster Area. A session chair has been appointed to discuss a maximum of 8 concurrent posters within each session.

  Instructions for the authors of posters in poster discussion session:
  Poster authors are required to be on standby during the session in which their poster is being discussed, to answer any questions by the chair of the session and any participants.

- Poster
  Authors are required to display a poster on the designated poster panel. Abstracts are grouped by topic.

  Instructions for the authors of posters:
  Poster mounting time: Posters can be mounted as of 16:00 on Wednesday, 9 May 2012 or anytime after that. Posters should be on display for the poster reception. Poster removal time: Posters should be removed on Sunday, 13 May 2012 before 12.00. Any posters remaining after this time will be discarded. Double sided tape for mounting your poster will be available in the poster area.

Authors are requested to be present next to their poster during the poster reception which will be held on Thursday, 10 May 2012 as of 18:30. It will also be indicated in the official schedule, that posters can be viewed during lunch time on Thursday, 10 May; Friday, 11 May and Saturday, 12 May.

- E-Posters
  Authors upload an electronic poster in the ESTRO system. E- posters will be available for viewing in special stations available at the conference venue, anytime during the conference. There is no designated time slot for viewing. You will be able to view all electronic posters as frequently, and as often as you wish.

  In the abstract book:
  Oral Communication abstracts are designated with OC + number. Poster Discussion abstracts are designated with PD + number. Posters are designated with PO + number. Electronic Posters are designated with EP + number.

INTERNET CORNERS
2 internet corners in the exhibition area will be available during opening hours of the exhibition for all participants.

LUNCHEONS AND REFRESHMENTS
Coffee breaks and lunches will be served in the exhibition area to all participants and exhibitors wearing their conference badges.
General Information

OFFICIAL LANGUAGE
The official language of the congress is English. No simultaneous translation will be provided.

OPENING CEREMONY & WELCOME RECEPTION
All participants, registered accompanying persons, and company delegates are invited to the official opening ceremony which will be held in the main auditorium on Wednesday 9 May, 2012 at 18:00. The opening ceremony will be followed by the welcome reception which will take place in the exhibition area.

V. Valentini (IT) - Chair of Scientific Programme Committee ESTRO 31
N. Jornet (ES) - Chair of Scientific Programme Committee ESTRO 31
C. Haie Meder (FR) - Chair of the World Congress of Brachytherapy (WCB)
A. Ramos (ES) - Chair of National Organising Committee
C. Muñoz (ES) - Chair of National Organising Committee

KEYNOTE SPEAKER: Dr. Manel Esteller (ES)
EPIGENETICS IN HEALTH AND DISEASE: MEDICAL APPLICATIONS
Entertainment: Pagagnini

About the keynote speaker: Dr. Manel Esteller
Manel Esteller (Sant Boi de Llobregat, Barcelona, Catalonia, Spain, 1968) graduated in Medicine from the Universidad de Barcelona in 1992, where he also obtained his Ph.D. degree specializing in molecular genetics of endometrial carcinoma, in 1996. He was an Invited Researcher at the School of Biological and Medical Sciences at the University of St. Andrews, (Scotland, UK) during which time his research interests focused on the molecular genetics of inherited breast cancer. From 1997 to 2001, Esteller was a Postdoctoral Fellow and a Research Associate at the Johns Hopkins University and School of Medicine, (Baltimore, USA) where he studied DNA methylation and human cancer. His work was decisive in establishing promoter hypermethylation of tumour suppressor genes as a common hallmark of all human tumours. From October 2001 to September 2008 Manel Esteller was the Leader of the CNIO Cancer Epigenetics Laboratory, where his principal area of research were the alterations in DNA methylation, histone modifications and chromatin in human cancer. Since October 2008, Dr Esteller is the Director of the Cancer Epigenetics and Biology Program (PEBC) of the Bellvitge Institute for Biomedical Research (IDIBELL) in Barcelona, Leader of the Cancer Epigenetics Group, Professor of Genetics in the School of Medicine of the University of Barcelona, and an ICREA Research Professor. His current research is devoted to the establishment of the epigenome maps of normal and transformed cells, the study of the interactions between epigenetic modifications and non-coding RNAs, and the development of new epigenetic drugs for cancer therapy. Author of more than three hundred original peer-reviewed manuscripts in biomedical sciences, he is also a Member of numerous international scientific societies, Editorial Boards and reviewer for many journals and funding agencies. Dr Esteller is also Associate Editor for Cancer Research, The Lancet Oncology and Carcinogenesis, Editor-in-Chief of Epigenetics and President of the Epigenetics Society.
His work has received, among other, the Best Young Cancer Researcher Award by the European School of Medical Oncology (1999), First Prize in Basic Research at the Johns Hopkins University and Medical Institution (1999), Best Young Investigator Award from the European Association for Cancer Research (2000), Carcinogenesis Award (2005), Beckman-Coulter Award (2006), Fondazione Piemontese per la Ricerca sul Cancro (FPRC) Award (2006), Swiss Bridge Award (2006), Innovation Award from the Commonwealth of Massachusetts (2007), Human Frontier Science Program Award (2007), DBiopharm-EPFL Award (2009), Dr. Josef Steiner Cancer Research Award (2009), Lilly Foundation Preclinical Biomedical Research Award (2009), World Health Summit Award (2010), National Award in Genetics (2011) and the European Research Council Advanced Grant (2011).

POSTERS
Posters will be set-up in the Poster area and can be viewed at any time during congress open hours.

POSTER RECEPTION
All participants, registered accompanying persons and company delegates are invited to the poster reception which will be held in the poster area on Thursday, 10 May at 18:00.

SATELLITE SYMPOSIA
Commercial satellite symposia will be held during lunch breaks. Please refer to the “Satellite symposia” section of this programme book for additional information.

SMOKING
There will be a strict non-smoking policy within all areas of the conference facilities.
SOCIAL ACTIVITIES

- **Wednesday 9 May**
  All registered participants & accompanying persons and all company delegates are invited to the welcome reception which will take place in the exhibition area from 19:30 to 20:30.

- **Thursday 10 May**
  All participants are invited to the poster reception which will take place in the poster area from 18:30 to 19:30. Canapés and drinks will be served while participants view more than 500 of the best posters. During the reception, 4 awards of 1000€ each will be handed out to the best scored posters.

- **Saturday 12 May**
  At 20:00 all participants and registered accompanying persons are invited to the ESTRO night which will take place at Cupula Las Arenas, Placa Espanya 08014, Barcelona.

SPEAKER PREVIEW

The Speaker Preview Room is located in Room 133/134.

Speakers are requested to bring their PowerPoint presentations to the Speaker Preview Room at least 3 hours prior to the start of their session or the day before if their session is planned in the early morning.

OPENING HOURS:

- Wednesday, 9 May > 16.00-18.00
- Thursday, 10 May > 07.00-18.00
- Friday, 11 May > 07.00-18.00
- Saturday, 12 May > 07.00-18.00
- Sunday, 13 May > 07.30-12:00

WIFI

A wireless internet area will be available during congress hours on the ground floor.

Acknowledgements

ESTRO, THE EUROPEAN SOCIETY FOR RADIOTHERAPY AND ONCOLOGY WISHES TO THANK FOR THEIR SUPPORT TO THIS CONGRESS:

- Accuray
- Bayer HealthCare
- Carl Zeiss Meditec AG
- CIVCO Medical Solutions
- Dr Sennewald Medizintechnik
- Elekta
- Philips Healthcare
- RaySearch Laboratories
- Varian Medical Systems International AG
- Vero GmbH

All companies having supported the participation of delegates in the congress and/or participating in the technical exhibition.

A special thank you to the Chairpersons of the Scientific Committee, Vincenzo Valentini and Nuria Jornet for having accepted the responsibility to develop the scientific programme and to Alfredo Ramos Aguerri and Carles Munoz Montplet for having gracefully accepted to host the ESTRO 31 Congress and taken on the heavy burden of its local organisation.

ESTRO WANTS TO WELCOME AS SPECIAL GUESTS:

- ASTRO American Society for Radiation Oncology
- CARO Canadian Association of Radiation Oncology
- EANM European Association of Nuclear Medicine
- EAU European Association of Urology
- ECCO European CanCer Organisation
- EFOMP European Federation of Organisations for Medical Physics
- ESMO European Society for Medical Oncology
- ESSO European Society of Surgical Oncology
- EORTC European Organisation for Reseach and Treatment of Cancer
- PROS The Paediatric Radiation Oncology Society
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Awards

*** AWARD LECTURES 2012 ***

**Emmanuel van der Schueren Award Lecture**
> Quality and safety in radiotherapy
  P. Scaillet (BE)
  Thursday, 10 May 2012 • 12:30-13:00 • Auditorium

**Claudius Regaud Award Lecture**
> Radiation oncology future - Individualization by integration of biology and high technology
  M. Baumann (DE)
  Friday, 11 May 2012 • 11:45-12:45 • Auditorium

**Klaas Breur Award Lecture**
> 25 years of clinical trials for tailoring external irradiation of localized prostate cancer (PCa)
  M. Bolla (FR)
  Saturday, 12 May 2012 • 12:30-13:00 • Auditorium

*** HONORARY MEMBER LECTURES ***

> The battle against nasopharyngeal cancer
  A.W.M. Lee (HK)
  Saturday, 12 May 2012 • 11:45-12:30 • Auditorium

> Radiation can be a surgeon’s best tool
  P. Naredi (SE)
  Saturday, 12 May 2012 • 11:45-12:30 • Auditorium

*** ESTRO-ACCURAY AWARD ***

> Stereotactic body radiation therapy for liver tumors
  W. Wunderink (NL)
  Friday, 11 May 2012 • 17:30-17:40 • Auditorium

*** ESTRO-VARIAN AWARD ***

> Reporting of late rectal and urinary bladder side effects after MRI guided adaptive brachytherapy of cervix cancer
  P. Georg (AT)
  Friday, 11 May 2012 • 17:40-17:50 • Auditorium

*** ESTRO-JACK FOWLER UNIVERSITY OF WISCONSIN AWARD ***

> A Bayesian framework for marker-based patient positioning with a few projections in very short arcs
  W. Hoegele (DE)
  Friday, 11 May 2012 • 17:50-18:00 • Auditorium
Awards

PIERRE SCALLIET
Université Catholique de Louvain, Brussels, Belgium

*** Emmanuel van der Schueren Lecture ***

Pierre Scalliet was born a Frenchman in 1953, and still is after 50 years in Belgium, his second fatherland. He was educated in the Lycée Français de Belgique for his secondary school, then at the Medical Faculty in Lille for the early years of his medical studies and lastly in the Université Catholique de Louvain for the last leg of his training. He started a fellowship in internal medicine (1979-1983), then a second fellowship in radiotherapy (1983-1987), as he was offered an opportunity to pursue an academic career in this specialty. A bit startled at the beginning to be invited in the “caves” of the hospital, he quickly became fascinated by the enormous potential for development in radiotherapy. His professor at the time was André Wambersie who introduced him to the scientific aspects of the specialty. After a years training in Villejuif with Prof Tubiana, Chassagne and Dr Gerbaulet, he started a PhD research fellowship in Leuven, in the experimental radiotherapy laboratory of E. Van der Schuern. This was the start of a long friendship, only interrupted by his early death. Working with E. Van der Schuern was a permanent experience of energy and enthusiasm. He had such a positive attitude toward life. ESTRO in its infancy needed young energetic officers and he joined in 1992, following JW Leer as a secretary. He was appointed administrator when the office moved from Leuven to Brussels (1997-1999). In the meantime he started his professional career in Antwerp, associate professor at the university and head of the Middelheim public hospital radiotherapy (1989). He then moved to his present position in Brussels, Université Catholique de Louvain (1995) as professor in oncology and head of the radiotherapy department. His main fields of interest are in quality and safety, GI and breast cancer and geriatric oncology.

PROF. MICHAEL BAUMANN
TU Dresden, Med. Faculty Carl Gustav Carus, Dresden, Germany

*** Claudius Regaud Award Lecture ***

Professor Dr. Michael Baumann is Professor of Radiation Oncology at the Technische Universität Dresden, chair of the Department of Radiation Oncology and a director of the multidisciplinary University Cancer Center. He also holds an appointment as research director of Radiation Oncology and Radiation Research in Oncology at the Helmholtz Center Dresden-Rossendorf and is the chair of the OncoRay National Center for Radiation Research in Oncology Dresden which is jointly established by the university, university hospital and the Helmholtz Center. Michael Baumann trained at the University of Hamburg and was a postdoctoral fellow at the Massachusetts General Hospital in Boston. He became in 1995 a staff member of the Medical Faculty and University Hospital of the University of Dresden, where he leads the research program on experimental radiotherapy and radiobiology, including investigations into the role of cancer stem cells, molecular targeted drugs, biological imaging for radiotherapy, and functional prediction for radiotherapy. His research is funded by the Deutsche Forschungsgemeinschaft (DFG) the German Federal Ministry of Education and Research (BMBF), the European Union, and the Saxony State Ministry for Science and Arts. He has published more than 250 scholarly articles and book chapters. He supervised more than 25 MD or PhD and 3 Habilitations theses. He received seventeen academic awards including the Gerhard-Hess-Award, (DFG, 1997), Michael Fry Research Award, Radiation Research Society (2002), Breuer Gold Medal, European Society for Therapeutic Radiology and Oncology (ESTRO, 2002), the Membership of the German National Academy Leopoldina (2004), and the G.H. Fletcher Distinguished Professor Lecture Award of the MD Anderson Cancer Center (2012). Dr. Baumann has been president of the ESTRO and is the immediate past president of the European Cancer Organisation (ECCO) and president elect of the German Society for Radiation Oncology (DEGRO).
Awards

**PROF. MICHEL BOLLA**  
**CHU Grenoble, France**  
***Klaas Breur Award Lecture***

Graduated Doctor in Medicine and Radiation Oncologist in 1976, Michel Bolla has been appointed senior Radiation Oncologist after spending one year as assistant at Centre GF Leclerc in Dijon (1977); he became associate Professor of Oncology in 1980 and full Professor in 1986 at the Joseph Fourier University in Grenoble. He was particularly involved in the structuring of Oncology at the Grenoble University Hospital as Head of the Radiation Oncology Department (1997-2009), President of the Federation of Oncology of Grenoble University Hospital (2000-7), President of the Arc Alpin Oncology Network (2002-9) and President of the Oncology network of Grenoble University (2007-). As a founding member of ESTRO (1980) and SFRO (1990), he integrated EORTC as a member of the Radiation Oncology Group (ROG) in 1980, and was successively secretary (1990-7), chairman (1997-2000) and member of the EORTC Board (2000-6). He was nominated President of SFRO (2006-7), involved in the definition of radiotherapy quality criteria (Plan Cancer), and served as project-manager of the French Radiation Therapy Observatory, under the INCa and SFRO umbrella, with Dr Chauvet.

As regards to clinical research, he was one of the promoters of breast, cervix and colorectal cancers mass screening for women (50-74 years) in Isère (1990) and the coordinator of two Programme Hospitalier de Recherche Clinique (1993, 1996) of the French Ministry of Health, devoted to prognostic factors of localized breast cancer: DNA-synthesizing enzyme activities, S-phase fraction, DNA ploidy, Protein Tyrosin Kinase activity and Epidermal growth factor receptor. Within the field of prostate cancer, he contributed with the EORTC ROG in promoting the combination of external irradiation and androgen deprivation (NEJM 1997, Lancet 2002, NEJM 2009, Lancet Oncol 2010) and of immediate post-operative irradiation for high risk prostate cancer (Lancet 2005); he was among the first to experience the combination of concomitant and adjuvant docetaxel with irradiation and is now involved in robotics for prostate brachytherapy. He was the first radiation oncologist to contribute to the EAU Prostate Cancer guidelines and to be awarded by EMUC (2009) for excellence in Radiation Oncology. He is now consulting editor of European Oncology.

**DR ANNE W.M. LEE**  
**Pamela Youde Nethersole Eastern Hospital, Hong Kong**  
***Honorary Member***

Dr Lee graduated from the University of Hong Kong in 1976. She attained her Fellowship in Clinical Oncology by the Royal College of Radiologists (United Kingdom) in 1983, and became a Fellow of the Hong Kong Academy of Medicine (FHKAM) when it was established in 1993.

She became a consultant serving in public hospitals in Hong Kong since 1991. She has been the Chief of Service for the Department of Clinical Oncology in Pamela Youde Nethersole Eastern Hospital from its opening in 1994 until February 2012.

Her main research contributions focus on nasopharyngeal cancer. She founded the Hong Kong Nasopharyngeal Cancer Study Group, and was its Chairman in 2005-2007.

She was conferred Doctor of Medicine by the University of Hong Kong in 2008, and was awarded the Sir Patrick Manson Gold Medal. She has been appointed Honorary Clinical Professor in Department of Clinical Oncology, University of Hong Kong since 2009. She has numerous publications and she has delivered numerous invited lectures. She was Gilbert H. Fletcher Distinguished Professor Lecturer, awarded by The University of Texas, M.D. Anderson Cancer Center, in 2009.

She is currently the Vice President of Hong Kong College of Radiologists, and the Vice Chairman of Hong Kong Anti-Cancer Society. She also serves in many international academic organizations. She is an Associate Editor or editorial board member for many leading journals.
Awards

PROF. PETER NAREDI
Umeå University Hospital, Sweden
*** Honorary Member ***

Peter Naredi is professor of surgery at the Umeå university hospital. He is subspecialized in Surgical oncology and mainly Hepato-pancreato-biliary surgery. After his Ph.D. in Surgery 1992 he did a postdoctorial period at the Cancer Center at UCSD in San Diego, California. He returned to Sahlgrenska university hospital in Göteborg, Sweden before he (in 1997) moved to Umeå in Northern Sweden in 2003 he became the professor and chair of the Department of surgery. Naredi has been the initiator and P.I. of several global clinical studies with immunotherapy in melanoma and renal cell carcinoma. Presently his research focus is on cancer chemotherapy resistance and the interaction of tyrosine kinase inhibitors and platinum based cytostatics. He is President of the European Society of Surgical Oncology (ESSO) and the immediate past president of the Swedish surgical society.

WOUTER WUNDERINK
Erasmus Medical Center Rotterdam, The Netherlands
*** ESTRO-ACCURAY Award ***

Wouter Wunderink was born on December 30th 1972, Rotterdam, the Netherlands. He studied applied physics at Delft University of Technology in the Netherlands, where he specialized in signal processing during the Masters program. In 2000, he graduated with a Masters of Science degree before being hired as a scientific programmer to implement tools for spectral analysis. In 2001, he was appointed a project manager in the Royal Netherlands Navy, responsible for the acquisition and acceptance testing of personnel training facilities. He became acquainted with medical physics in 2002, after being selected to participate in a research project on stereotactic body radiation therapy (SBRT) treatments of liver cancer at Erasmus MC, in close co-operation with radiation oncologist Alejandra Méndez Romero. Wouter co-authored 15 peer-reviewed papers and abstracts on the subject and was the inventor of a patented solution for monitoring patients’ respiration for the acquisition of 4D-CTs. The defence of his PhD thesis, entitled “Accurate Targeting of Liver Tumors in Stereotactic Radiation Therapy”, took place on the 4th of March 2011 at the Erasmus University Rotterdam. On the occasion of Wouter’s and Alejandra’s defences, an international symposium on liver SBRT was organised. Next to his research activities, Wouter developed treatment procedures, co-assisted treatments, and prepared the quality assurance for an international clinical trial (RAS-trial) on the treatment of liver metastases. In September 2010, Wouter entered a medical physics residency at Erasmus MC for radiation oncology with a focus on the implementation of new medical imaging technologies to improve radiotherapy treatments.
Awards

DR. PETRA GEORG
Medical University Vienna, Austria

*** ESTRO-VARIAN Award ***

Petra Georg received her medical degree at the Medical University of Vienna, Austria, in 2000. Between 1998-1999 she stayed as early stage researcher at the Department of Radiation Oncology at the Catholic University Leuven (Belgium) in the framework of the Erasmus students exchange programme. The research project on the “Cosmetic results of breast conserving treatment for mammary cancer - the impact of different radiotherapy treatment”, which she conducted in Leuven, raised her interest in normal tissue effects. In 2004, after 4 years of clinical practice in general medicine and endocrinology, Petra Georg entered the residency programme for radiotherapy and radiation oncology at the Department of Radiotherapy, Medical University Vienna/AKH Wien. Since then, she combined patient care and clinical research, in which she was mostly focusing on late side effects of radiation treatment and their dose dependency. Petra Georg has been actively involved in the implementation and further development of MRI guided adaptive brachytherapy of cervix cancer in the research group of Prof. Richard Pötter. Her major contribution was the dose response definition for bladder and rectum morbidity after combined external and MRI guided adaptive brachytherapy. In November 2010 she passed her board examination and in January 2012 she was certified as medical specialist in the field of radiotherapy and radiation oncology. Beside clinical responsibilities, Petra Georg is an active lecturer covering both basic clinical education for medical students as well as advanced radiotherapy for PhD students at the Medical University of Vienna. She is also supervising master and doctoral theses.

WOLFGANG HOEGELE, M.SC.
Regensburg University Medical Center, Regensburg, Germany

*** ESTRO-JACK FOWLER University of Wisconsin Award ***

W. Hoegele was born 1984 in Cham, Germany. Since 2003, he has been studying mathematics at the Regensburg University of Applied Sciences (HSR), Germany. In 2007 he graduated with a German diploma degree with distinction. Topic of the thesis was the development of novel optimization techniques for inverse treatment planning in radiotherapy. During these studies, he spent a research semester at the Max-Planck-Institute for Astrophysics in Garching/Munich, Germany, focusing on Computational Fluid Dynamics (CFD) for the simulation of supernovae. After the degree in mathematics, he spent a half-year research stay in 2008 at the Dana-Farber / Brigham and Women’s Cancer Center (DF/BWCC), Harvard Medical School (HMS), Boston, USA, working on novel VMAT optimization strategies. For excellence in studies and research in applied mathematics he received the award ‘Kulturpreis Bayern’ in 2008. From end 2008 until end 2009 he studied medical physics at the Heidelberg University, Medical Faculty of Mannheim, Germany, and graduated as M.Sc. with best grade. For the master’s thesis he spent a second half-year stay at the DF/BWCC (HMS) and focused further on the clinical application of new VMAT optimization strategies. Since 2009 he has been working on his doctoral studies in medical physics (biomedical program) focusing on image guidance for radiotherapy at the Regensburg University Medical Center, Germany. In parallel, he is teaching computer science and engineering students in applied mathematics at the HSR. His current research is concerned with the Bayesian estimation of patient positioning errors utilizing short-arc radiographs.
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| Contact: Phil Bachman | Phone: 719 590 1077 | Fax: 719 590 1071 |
| Email: phil@radimage.com |
| RaySearch Laboratories AB | 400 | Sveavägen 25, SE111 34 Stockholm, Sweden.
| Contact: Cecilia Kröjs | Phone: +45 8 545 061 30 | Fax:+45 8 545 061 39 |
| E-mail: info@raysearchlabs.com | Website: www.raysearchlabs.com |
| QFix | 2200 | 440 Church Road, Avondale, PA 19311, USA.
| Contact: Jing Han | Phone: +1 610.258.0588 | Fax: +1 610.258.0585 |
| Email: Jing.Han@qfix.com | Website: www.qfix.com |
| Philips Healthcare | 1000 | 3140 2785600, Email: healthcare@philips.com, www.philips.com/healthcare |
| PTW-Freiburg | 1300 | Loerracher Str. 7, 79115 Freiburg, Germany.
| Contact: Mr Axel Hoffmann | Phone: +49 761 4 90 55-0 | Fax: +49 761 4 90 55-70 |
| Email: Info@ptw.de | Website: www.ptw.de |
| Oncura | 3900 | The Grove Centre, White Lion Road, Amersham, Bucks, HP7 9LL, United Kingdom.
| Contact: Emily Jarrold | Phone: +44 (0) 1494 732727 | Fax: +44 (0) 1494 732725 |
| Email: oncura.com | Website: www.oncura.com |
| Orfit Industries Nv | 1200 | Vosveld 9A, B - 2110 Wijnegem, Belgium.
| Contact: Johan Focquet, Export Sales Manager - Europe | Phone: +32 (0)3 326 20 26 | Fax: +32 (0)3 326 14 15 |
| Email: Johan.focquet@orfit.com | Website: www.orfit.com |
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| Contact: Cliff Miller | Phone: 781-933-1940 | Fax: 781-932-8647 |
| Email: cmiller@nelcoworldwide.com | Website: www.nelcoworldwide.com |
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www.seor.es
The Spanish Society for Radiation Oncology (SEOR) is a private, nonprofit scientific association with more than 800 Spanish and foreign specialists (including medical residents) whose work focuses primarily on the treatment of cancer and other non-neoplastic diseases through the use of ionizing radiation alone or in combination with other therapeutic modalities (surgery, chemotherapy, biopharmaceuticals).
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### Exhibitors

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<thead>
<tr>
<th>Company Name</th>
<th>Booth Number</th>
<th>Address</th>
<th>Contact Name</th>
<th>Phone</th>
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<th>Email</th>
<th>Website</th>
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<tbody>
<tr>
<td>Theraview Technology</td>
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<td>Klepelhoek 11, 3833 GZ Leusden, The Netherlands</td>
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THURSDAY, 10 MAY 2012
13:00 - 14:20 • ROOM 115 (Lunch box provided)

➢ TARGETED INTRAOPERATIVE RADIOThERAPY WITH THE INTRA-BEAM SYSTEM
   CHAIRS: Prof. Dr. David Joseph and Prof. Dr. Jeffrey Tobias

13:00 > Introduction
13:10 > The TARGIT trial - evolution and latest update
       Prof. Dr. Jeffrey Tobias, Royal Free & UCL Medical School, London
13:25 > IORT as a tumorbed boost - local control and patients preference
       Prof. Dr. David Joseph, Sir Charles Gardliner Hospital, University
       Department of Surgery, Nedlands, Australia
13:40 > Implementation of TARGIT after 20 years of electron IORT:
       the Montpellier experience
       Prof. Dr. David Azria, University Montpellier, Department of Radiation
       Oncology, Montpellier, France
13:55 > New Applications - Kypho-IORT and intravaginal X-ray brachytherapy
       Dr. Elena Sperk, University Medical Center Mannheim, Mannheim,
       Germany
14:10 > Panel discussion and conclusion
14:20 > Close

Elektc

THURSDAY, 10 MAY 2012
13:00 - 14:20 • ROOM 116 (Lunch box provided)

➢ ONE ELEKTA - YOUR CLINICAL PARTNER

13:00 > Targeting radiation therapy to patients; the role of brachytherapy
       Prof. F. Guedea, Instituto Catalán de Oncología (ICO), Barcelona, Spain
13:40 > Integrating MOSAIQ® into a multi-vendor department
       June Dean DCR(T), MSc Medical Physics, Oncology Centre, Addenbrookes
       Hospital, Cambridge, UK
13:55 > Commissioning of the Elekta Agility for clinical use
       Dr. Vivian Cosgrove, St. James Institute of Oncology, Leeds, UK
EVERYTHING OR SOMETHING? IS THERE A PLACE FOR PARTIAL BREAST IRRADIATION IN EARLY STAGE BREAST CANCER?

Join us as experts debate:
“Partial breast irradiation is an effective sole treatment after lumpectomy for women with small tumours who are at low risk of having multifocal disease”
The debate will address the underlying basis for partial breast irradiation of any type (i.e. external beam radiotherapy, intraoperative irradiation or brachytherapy). Your vote will determine the final outcome.

→ Debate Moderator:
  Prof. Dr. Peter Niehoff
  Krankenhaus Köln Merheim, Germany

→ Debate Moderators:
  Douglas Arthur, MD
  Virginia Commonwealth University School of Medicine, USA
  Frank Sullivan, MD
  Galway University Hospital, Ireland

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FRIDAY, 11 MAY 2012
13:00 - 14:20 • ROOM 118/119 (Lunch box provided)

➔ HYPERTHERMIA AND RADIATION:
PROGRESS IN TARGETED TUMOR THERAPY

CHAIRS: Stephan Bodis MD (Aarau, Switzerland) and Peter Levendag MD PhD (Rotterdam, The Netherlands)

13:00 - 13:10 ➔ Welcome and introduction
Chairs

13:10 - 13:22 ➔ The Atzelsberg Circle: the challenge of clinical trials
Rolf Sauer MD (Erlangen, Germany)

Peter Levendag MD PhD (Rotterdam, The Netherlands)

13:34 - 13:46 ➔ Hyperthermia & chemotherapy; from sarcoma to pancreatic cancer
- a path for mainline tumor treatment?
Rolf Issels MD PhD (Munich, Germany)

13:46 - 13:58 ➔ Technological challenges in hyperthermia
Gerard van Rhoon PhD (Rotterdam, The Netherlands)

13:58 - 14:10 ➔ Immune response and heat shock
Udo Gaipl PhD (Erlangen, Germany)

14:10 - 14:20 ➔ Discussion and closing remarks

Vero SBRT

FRIDAY, 11 MAY 2012
13:00 - 14:20 • ROOM 115 (Lunch box provided)

➔ CLINICAL EXPERIENCES WITH VERO SBRT

Join us at ESTRO 31 in Barcelona to hear about the latest Vero SBRT news including the system’s unique tracking features.

➔ Welcome & Introduction
Herbert Frosch, Managing Director, Vero GmbH

➔ JOINT SPECIALTY-DRIVEN PRESENTATION
Clinical Opportunities & Technical Solutions
Prof. Dr. Marc De Ridder, Head of Radiotherapy Department, UZ Brussel
Prof. Dr. Dirk Verellen, Head of Medical Physics, UZ Brussel

➔ Outlook & Future Developments
Herbert Frosch, Managing Director, Vero GmbH
PHILIPS IN MOTION

Functional MRI - Its Role in Radiation Oncology, A Clinician’s Point of View
Prof. Karin Haustermans, Chair of Department of Radiation Oncology, Oncology Cancer Institute, Leuven, Belgium

Treatment Planning in a Changing World - Dynamic Planning with Pinnacle³
Carl Rowbottom, Ph.D, Christie Hospital NHS Trust, Manchester, UK

Incorporating O-MAR Metal Artifact Correction into Radiotherapy Workflow
Carri K. Glide-Hurst, Ph.D., DABR, Senior Staff Physicist, Henry Ford Health System, Detroit, Michigan, USA

Early Clinical Results with New Pinnacle³ Auto-Segmentation
Mark Warren, Senior Planning Radiographer, Christie Hospital NHS Trust, Manchester, UK

ADVANCING RADIATION ONCOLOGY TOGETHER
CHAIR: Prof. Eric Lartigau, Centre Oscar Lambret, Lille, France

Vision of Accuray
Mr. Euan Thomson, Accuray Incorporated, Sunnyvale, USA

Stereotactic Radiotherapy for Peripheral and Centrally Located NSCLC
Dr. Noelle van der Voort van Zyp, Erasmus MC- Daniel den Hoed Cancer Center, Rotterdam, The Netherlands

Adaptive Treatment with TomoTherapy for Head and Neck Cancer: Dream or Reality?
Prof. Vincent Gregoire, UCL- St-Luc University Hospital, Brussels, Belgium
Varian Medical Systems

FRIDAY, 11 MAY 2012
13:00 - 14:20 • ROOM 117 (Lunch box provided)

→ ADVANCED TRUEBEAM™ CLINICS

- **Introduction & Symposium Chair**
  Prof. Dr. Ben J. Slotman, VU University Medical Center, Amsterdam, The Netherlands

- **RapidArc® Radiosurgery for Intracranial and CNS Indications**
  Prof. Dr. Ufuk Abacıoğlu, NeoLife Medical Center, Istanbul, Turkey

- **Initial Experience of Extreme Hypofractionation with TrueBeam™ (SBRT using FFF) and SpaceOAR for Low Intermediate-Risk Prostate Cancer**
  Dr. Filippo Alongi, Humanitas Cancer Center, Rozzano (Milano), Italy

- **Clinical Experience in Real-Time Motion Tracking with the Varian Calypso System**
  Prof. Dr. Carlo Greco, University of Pisa, Italy

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Bayer Healthcare

SATURDAY, 12 MAY 2012
13:00 - 14:15 • ROOM 115 (Lunch box provided)

→ CRPC WITH BONE METASTASES:
SURVIVAL BENEFIT WITH NEW-GENERATION THERAPIES

13:00 - 13:10 > **Welcome and introduction**
- Introduce the agenda and faculty
- CRPC: Global incidence and current treatment paradigm
  **Chair:** (to be announced)

13:10 - 13:25 > **Where do we stand in metastatic CRPC?**
- Overview of all treatment modalities in mCRPC divided according to OS benefit and mechanism of action (docetaxel, cabazitaxel, abiraterone, sipuleucel-T) and no OS benefit (denosumab, bisphosphonates, beta-emitters, EBRT)
- Key data (primary endpoints, secondary endpoints, safety) for current approved therapies
  **Speaker:** Daniel Heinrich, Medical Oncology, Norway

- Morbidity and mortality associated with bone metastases
- Mechanisms of action, efficacy and safety of current therapies for bone metastases (beta-emitters and EBRT in detail; also denosumab and bisphosphonates)
- Unmet need for bone-targeted agents with OS benefit
  **Speaker:** (to be announced)

13:40 - 14:00 > **Recent and Upcoming Data in Metastatic CRPC**
- Session will describe recent data (including phase 3 with radium-223) in metastatic CRPC and discuss key trials expected to yield data soon
  **Speaker:** Valerie Lewington, Nuclear Medicine, UK

14:00 - 14:08 > **Optimizing therapy: Which patient for which treatment?**
- Patient selection for different modalities of therapy
  **Chair**

14:08 - 14:14 > **Questions and answers - Chair with faculty**

14:14 - 14:15 > **Closing remarks - Chair**
Clinical

HOW IMAGING INNOVATIONS CAN OPTIMISE MULTIDISCIPLINARY TUMOUR BOARDS’ CHOICES
Jointly organised with ESOR
Course Directors: P. Lambin (NL) and A. Palkó (HU)

WEDNESDAY, 9 MAY 2012
8:30 - 16:30 • ROOM 116

Course aims
This course, jointly organized by ESTRO and ESOR (European School of Radiology), aims at promoting an integrated approach between specialists involved in multidisciplinary tumour boards to tailor the best treatment for each individual patient by exploiting the use of imaging.

New advanced imaging technology not only provides morphological information on tumour extension, but also information on tumour function and biology. It not only allows a good evaluation of tumour response during and after treatment, but also an early detection of tumour recurrence. Radiation oncologists increasingly use hybrid equipment in which diagnostic imaging technology is incorporated within the radiation treatment machines to allow continuous adaptation of radiation treatment according to the daily response of the tumour, the surrounding organs and their movement.

Thus there is a growing interest to enhance the collaboration between imaging specialists to optimise and to adapt the different uses of imaging to the comprehensive clinical management of the oncological patient.

By the combination of lectures and case discussions, this course aims to offer a programme focusing on the use of imaging in a truly multidisciplinary environment to support understanding between different specialists’ needs, practise common language and delineating research perspectives.

Who should attend?
The target group consists of radiation oncologists and senior residents and junior radiologists who are interested in learning and improving their knowledge on an optimal approach to multidisciplinary treatment management exploiting the use of imaging.

PROGRAMME

08:30 - 08:45 > Opening remarks

PART I: Innovation in hardware
08:45 - 09:15 > PET-MR: What are the prospective? - E. Rummeny (DE)
09:15 - 09:45 > Dual energy CT: preclinical and clinical experience - C. Zech (DE)

PART II: Quantification of imaging
09:45 - 10:15 > Standardisation in PET - A. Chiti (IT)
10:15 - 10:30 > Coffee break
10:30 - 11:00 > Diffusion MR: potential and challenges - V. Goh (UK)
11:00 - 11:30 > Quantification of response: beyond RECIST - L. Marti-Bonmati (ES)
11:30 - 12:00 > Radiomics: how to get more out of imaging - P. Lambin (NL)
12:00 - 12:30 > Discussion: Moderated by A. Palkó (HU)
12:30 - 13:30 > Lunch

PART III: Clinical session: What do we need to know in a multidisciplinary tumour board? State of the art and beyond
13:30 - 14:00 > Head and Neck cancer - M. Becker (CH)
14:00 - 14:30 > Lung cancer - L. Bonomo (IT)
14:30 - 15:00 > Coffee Break
15:00 - 15:30 > Prostate cancer - J.C. Vilanova (ES)
15:30 - 16:00 > Rectum cancer - R. Tan-Beets (NL)
16:00 - 16:30 > Discussion and closing
Radiobiology

COMBINING RADIATION WITH TARGETED THERAPIES: CONCEPTS, OPPORTUNITIES AND PITFALLS

Course Directors: C. Vens (NL) and A. Chalmers (UK)

WEDNESDAY, 9 MAY 2012
9:00 - 17:00 • ROOM 118-119

Course aims
Research into the mechanisms underlying resistance of tumours to radiation therapy has identified a number of key pathways that could be targeted in order to improve tumour control. And advances in drug development have provided us with new drugs to manipulate these pathways. But only a few of these targeted agents have been successfully combined with radiation therapy in the clinic, and the results have been mixed. The aim of this course is to provide an overview of the key concepts and pathways involved, and to discuss progress made and problems encountered in bringing radiation/targeted therapy combinations to the clinic.

Who should attend the course?
The course is targeted at radiation oncologists who may be aware of the existence of targeted therapies, and may even have prescribed them, but would like to learn more. In particular we will try to explain why and how these agents can be combined with radiation therapy. Research or scientific experience is not required, but the course will also be of interest to scientists undertaking radiation related research.

Programme

09:00-09:45
Welcome and introduction - C. Vens (NL) and A. Chalmers (UK)

09:45-10:15
Molecular targeted agents in combination with radiotherapy - a pharmaceutical industry perspective - O. Ataman (UK)

10:15-10:45
Targeting the DNA damage response - A. Begg (NL)

10:45-11:15
Targeting radiation induced signal transduction pathways - G. Higgins (UK)

11:15-11:45
Coffee break

11:45-12:15
Targeting the microenvironment to enhance tumour radiation responses - N. Cordes (DE)

12:15-12:45
Combining radiation with agents that target angiogenesis and vasculogenesis - E. Hammond (UK)

12:45-13:15
Lunch

13:15-13:45
What to target and who to include? - K. Harrington (UK)

13:45-14:15
Targeted therapy biomarkers for patient individualization - M. O’Connor (UK)

14:15-14:45
Biomarkers of radiation response - D. Zips (DE)

14:45-15:15
The radiation oncologist’s perspective: hopes and fears - R. Simcock (UK)

15:15-15:45
Coffee Break

15:45-16:15
Exploiting opportunities: how to design RT combination trials? - A. Chalmers (UK)

16:15-16:45
Combining targeted radiation with targeted agents - a vision for the future... - T. Lawrence (USA)

16:45-17:15
Final discussion and concluding remarks - Anthony Chalmers (UK) and C. Vens (NL)
Physics

**WHAT A PHYSICIST SHOULD CONSIDER BEFORE GOING INTO A PROTON THERAPY**

**Course Director:** H. Nyström (SE)

**Wednesday, 9 May 2012**

**09:00 - 17:00 • Room 115**

**Course aims**

In many countries in Europe as well as in the rest of the world, proton therapy facilities are either in the process of being created or are already well-established. In fact, the increase in the number of new facilities has been more or less exponential for many years, leading to an increased demand for medical physicists capable of carrying out proton therapy projects.

There are many obvious advantages when using proton therapy compared to conventional photon-based radiotherapy, since a significantly larger fraction of the absorbed dose is actually delivered to the target volumes and an overall superior dose distribution is achieved.

However, substantial differences exist in terms of technology, treatment planning, dosimetry, QA etc. What is a reasonable staffing level? What is a reasonable “business plan”? How should acceptance testing be performed? What are the demands for clinical commissioning? What are the demands for treatment planning? What are the demands for QA?

This course aims at answering a few of the above-mentioned questions and at giving an overview of the particular aspects of radiotherapy that are specific to proton therapy. In particular those involved in the start-up phase of a proton therapy project or those that are considering entering into such a project would benefit from participation.

**Who should attend?**

The participant in the course is expected to be a medical physicist experienced in conventional radiotherapy but curious about proton therapy.

**Programme**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>09:00 - 09:30</td>
<td>What is the rational for going into proton therapy and who is planning to do so? - H. Nyström (SE)</td>
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<tr>
<td>09:30 - 10:00</td>
<td>Introduction to the physics of protons and basic dosimetry for PT - A. Mazal (FR)</td>
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<td>10:00 - 10:30</td>
<td>How to write the specifications - M. Schwarz (IT)</td>
</tr>
<tr>
<td>10:30 - 11:00</td>
<td>Coffee break</td>
</tr>
<tr>
<td>11:00 - 11:30</td>
<td>Business plan and staffing - H. Nyström (SE)</td>
</tr>
<tr>
<td>11:30 - 12:00</td>
<td>Clinical commissioning of a passive scattering PT system - A. Mazal (FR)</td>
</tr>
<tr>
<td>12:00 - 12:30</td>
<td>Acceptance testing and clinical commissioning of a scanning beam PT system - J. McDonough (USA)</td>
</tr>
<tr>
<td>12:30 - 13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30 - 14:00</td>
<td>Treatment planning for passively scattered protons, including margin concepts - M. Engelsman (USA)</td>
</tr>
<tr>
<td>14:00 - 14:30</td>
<td>Treatment planning for actively scanned protons, including margin concepts - A. Lomax (CH)</td>
</tr>
<tr>
<td>14:30 - 15:00</td>
<td>CT scanning and the handling of image artifacts (including needed CT-QA) - M. Schwarz (IT)</td>
</tr>
<tr>
<td>15:00 - 15:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>15:30 - 16:00</td>
<td>How to obtain an efficient patient flow in a multi gantry PT facility? - J. McDonough (USA)</td>
</tr>
<tr>
<td>16:00 - 16:30</td>
<td>QA and plan verification in complex situations, including IMPT - A. Lomax (CH)</td>
</tr>
<tr>
<td>16:30 - 17:00</td>
<td>Round table discussion and summing up</td>
</tr>
</tbody>
</table>
Physics

RECENT ADVANCES IN BRACHYTHERAPY PHYSICS
Jointly organised by GEC-ESTRO BRAPHYS Group and the ESTRO Physics Committee
COURSE DIRECTORS: J. LM Venselaar (NL) and D. Baltas (DE)

WEDNESDAY, 9 MAY 2012
9:00 - 17:00 • ROOM 111

COURSE AIMS
• To demonstrate the most recent developments in brachytherapy physics: a discussion on recent and future societal reports and recommendations,
• To discuss the developments in source calibration, quality assurance, and new equipment,
• To discuss the steps towards modern 3D conformal image based brachytherapy,
• To discuss new and forthcoming advanced treatment planning: model based dose calculation algorithms and inverse planning and optimisation methodologies in intensity modulated brachytherapy,
• To discuss the similarities and differences between modern 3D conformal ERT and BRT and its consequences for the concepts of margins.

WHO SHOULD ATTEND?
The course is aimed primarily at medical physicists and medical physicists in training, and at technologists willing to update themselves on the latest developments in brachytherapy physics. A basic knowledge of brachytherapy physics is required.

PROGRAMME

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-09:15</td>
<td>Introduction: Towards modern brachytherapy physics - J. Venselaar (NL)</td>
</tr>
<tr>
<td>09:15-09:45</td>
<td>Source calibration: Current and future developments - T. Sander (UK)</td>
</tr>
<tr>
<td>09:45-10:30</td>
<td>Approaches for 3-D dose calculation in brachytherapy - L. Beaulieu (CA)</td>
</tr>
<tr>
<td>10:30-11:00</td>
<td>Coffee break</td>
</tr>
<tr>
<td>11:00-11:45</td>
<td>Inverse planning and optimization methodologies in intensity modulated brachytherapy - D. Baltas (DE)</td>
</tr>
<tr>
<td>11:45-12:30</td>
<td>Image guided brachytherapy: use of CT and MRI, US, and PET - FA Siebert (DE) and TP Hellebust (NO)</td>
</tr>
<tr>
<td>12:30-13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30-14:00</td>
<td>Uncertainties associated with the physical aspects: calibration and dose calculation - L. DeWerd (USA)</td>
</tr>
<tr>
<td>14:00-14:30</td>
<td>Uncertainties associated with the clinical steps: imaging, reconstruction, delivery and implications of inter/intra-fraction alterations - C. Kirisits (AT)</td>
</tr>
<tr>
<td>14:30-15:00</td>
<td>Similarities and differences in modern 3D conformal Radiotherapy: ERT versus BRT and its consequences for margin concepts - K. Tanderup (DK)</td>
</tr>
<tr>
<td>15:00-15:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>15:30-16:15</td>
<td>Quality management and specific QA procedures for modern imaging-based brachytherapy - M. Rivard (USA)</td>
</tr>
<tr>
<td>16:15-17:00</td>
<td>In-vivo dosimetry: detectors, techniques and possible clinical applications - J. Cygler (CA)</td>
</tr>
</tbody>
</table>
THE DELINEATION OF NORMAL STRUCTURES: PRACTICE AND CHALLENGES

Course Directors: D. Pasini (IT) and S. Rivera (FR)
Course Tutors: G. Mantello (IT), D. Genovesi (IT), B. Speleers (BE) and M. Leech (IE)

WEDNESDAY, 9 MAY 2012
8:15 - 17:00 • ROOM 131-132

Course aims
Intensity Modulated Radiotherapy Techniques (Static or rotational IMRT-techniques) rather than uniform intensity techniques give the ability to conform dose distributions to a variety of complex tumour sites/volumes while sparing nearby critical normal tissue structures (OAR) as possible.

The QUANTEC reports have summarised the evidence from a wide range of studies relating to the dose tolerance of the main OARs. Several of the reports highlight the issue of the normal tissue delineation considering both anatomical and functional aspects. In order to achieve a greater level of accuracy in the definition of OARs, there is an urgent need to improve the knowledge of the anatomical limits of some selected structures. It is therefore important to become familiar with contouring procedures on the different imaging modalities implemented in the treatment planning systems, without neglecting the organ dose-volume tolerance.

This course will specifically focus on the anatomical definition of normal structures within the head and neck, thorax and pelvic regions. An introductory lecture will illustrate the meaning of OAR delineation within the frame of the QUANTEC report.

The following section will be organised in:
1) A first theoretical part for each site, where an expert will give an overview of the delineation of the selected organ/s at risk in accordance with the QUANTEC recommendations.
2) It will be followed by a practical session in which the participants will have the opportunity to apply their knowledge in practice with the support of the faculty. They will be asked to contour organs on FALCON, an E-learning software tool based on the EDUCASE platform of ESTRO which has already been used successfully during previous workshops on target volume delineation.

In preparation for the course and to ensure maximum benefit, the participants will be asked to use the FALCON platform at home to delineate selected organs at risk. The same exercise will be repeated during the course and, after the experts’ lectures, the comparison between the exercises will be discussed by the teachers using FALCON tools. As an outcome of the course we would like the participants to review their clinical practice in the context of the new recommendations of normal structure delineation and QUANTEC guidelines.

Who should attend?
This course is designed for radiation technologists involved in planning and radiation oncologists in training.

PROGRAMME

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:15 - 08:30</td>
<td>Introduction - D. Pasini (IT) and S. Rivera (FR)</td>
</tr>
<tr>
<td>08:30 - 09:00</td>
<td>Delineation of organ at risk in the QUANTEC era - G. Gagliardi (SE)</td>
</tr>
<tr>
<td>09:00 - 09:45</td>
<td>Practice and challenges in H&amp;N OAR delineation (pharynx) - A. Eisbruch (USA)</td>
</tr>
<tr>
<td>09:45 - 10:00</td>
<td>FALCON - D. Pasini (IT) and S. Kaylor (USA)</td>
</tr>
<tr>
<td>10:00 - 10:30</td>
<td>Coffee break</td>
</tr>
<tr>
<td>10:00 - 11:15</td>
<td>Verification and discussion</td>
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<tr>
<td>11:00 - 11:45</td>
<td>Practice and challenges in thorax OAR delineation (heart - brachial plexus) - U. Nestle (DE)</td>
</tr>
<tr>
<td>11:45 - 12:30</td>
<td>OAR delineation in thorax: hands on contouring</td>
</tr>
<tr>
<td>12:30 - 13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30 - 14:15</td>
<td>Verification and discussion</td>
</tr>
<tr>
<td>14:15 - 15:00</td>
<td>Practice and challenges in pelvic OAR delineation (rectum - small bowel) - I. Syndikus (UK)</td>
</tr>
<tr>
<td>15:00 - 15:30</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>15:30 - 16:15</td>
<td>OAR delineation in pelvis: hands on contouring</td>
</tr>
<tr>
<td>16:15 - 16:45</td>
<td>Verification and discussion</td>
</tr>
<tr>
<td>16:45 - 17:00</td>
<td>Conclusions</td>
</tr>
</tbody>
</table>
ADDITIONAL SESSIONS
Contouring Workshops

- **BREAST**
  - **THURSDAY, 10 MAY 2012**
  - **08:00-10:00 • ROOM 131/132**
  - **Chair:** P. Poortmans (NL)
  - **Panellists:** A. Biete Sole (ES), B. Offersen (DK)
  - **Coordinator:** S. Rivera (FR)

- **PROSTATE**
  - **SATURDAY, 12 MAY 2012**
  - **08:00-10:00 • ROOM 131/132**
  - **Chair:** V. Khoo (GB)
  - **Panellists:** A. Bossi (FR), C. Salembier (BE)
  - **Coordinator:** B. de Bari (IT)

- **CNS**
  - **FRIDAY, 11 MAY 2012**
  - **08:00-10:00 • ROOM 131/132**
  - **Chair:** N. Burnett (UK)
  - **Panellists:** U. Ricardi (IT), M. Eble (DE), S. Delorme (DE)
  - **Coordinator:** B. de Bari (IT)

- **GYNAECOLOGY**
  - **SUNDAY, 13 MAY 2012**
  - **08:00-10:00 • ROOM 131/132**
  - **Chair:** R. Pötter (AT)
  - **Panellists:** C. Haie-Meder (FR), P. Petric (SI)
  - **Coordinator:** S. Rivera (FR)

**Educational aims of the workshops**
- Provide attendees with the opportunity for interactive training on contouring CTV, GTV and when relevant OAR and to discuss their results with international experts in the field.
- Provide the participants with knowledge on how contouring is performed in different institutions and on the existing recommendations and guidelines.
- Provide the participants with consistent information to validate or modify/improve their daily contouring practice.

**Methodology for the workshops**
- Clinical case presentation
- Delineation tool presentation
- Delineation with max 2 participants per computer
- Presentation of the contouring guidelines recommended by the experts for the delineation of the CTV, GTV +/- OAR + bibliographic references for the therapeutic strategy chosen
- Inter-comparison of the contours by the participants and by the experts
- Justification and comments. Analysis of the heterogeneity index
Lunch Symposium for Young Scientists

This symposium aims to present and discuss the experiences from different disciplines in working in a European country other than the one they trained in. The symposium will be made up of three parts.

Firstly, speakers have been invited from Radiation Oncologists, Physicists, RTTs and Biologists who have worked abroad both for short term and extended periods of time. Each speaker will present their personal experiences and any issues they had with having their qualifications recognised. They will also comment on how the situation may have changed since the time of their visit.

Secondly, there will be a talk on what ESTRO is doing to support young people (Technology Transfer Grants, ESTRO Fellows etc) as well as a talk on EU / UEMS accreditation.

For the third part, European national societies will display information on the current requirements for working clinically (i.e. as a registered professional) in terms of qualifications, experience and language ability, in their country.

EDUCATION AND WORKING AROUND EUROPE
FRIDAY, 11 MAY 2012
13:00-14:00 • ROOM 122-123
CHAIR: Mary Coffey (IE)

- 13:00 - 13:15 > What is ESTRO doing to support young people (TGGs, ESTRO Fellow etc)
  R. Potter (AT)

- 13:15 - 13:31 > Experience from 4 people trained in one country and working in another country for a long period
  M. Mangoni (IT), I. Torres (ES), L. Hong (AUS), JL Lopez Guerra (US)

- 13:31 - 13:47 > Experience from 3 people trained in one country and working in another country within the TTG programme
  C. Vens (NL), T. Reynders (BE), J. Stevanovic (SR)

- 13:47-14:02 > EU / UEMS accreditation
  J. Eriksen (DK)

- 14:02-14:30 > Discussion

A ROADMAP TO A CONTRACT WITH THE YOUNG MEMBERS OF ESTRO
During this session the Young Task Force will present the plans being made by ESTRO to develop Professional and Education opportunities specifically for the young members of ESTRO and to formally sign a contract of commitment with the Young societies of Europe.

CHAIRS: C. Clark (UK) and S. Rivera (FR)

- 14.30 > Objectives of the Young Task Force
  D. Zips (DE)

- 14.40 > Results of a survey of Young Professionals in Radiation Oncology
  B. De Bari (IT)

- 14.55 > Overview of the Roadmap to the Contract with the Young
  L. Muren (DK)

- 15.05 > Experiences of the French Young Society in Radiation Oncology (SFjRO) in setting up a contract with ESTRO
  P. Blanchard (FR) and S. Thureau (FR)

- 15.15 > Discussion panel with questions from the floor? All

YOUNG MOVING POSTER SESSION
There will be 14 moving poster sessions covering different topics in Clinical, Biology, Physics and RTT areas. The presentations will be informal and there will be plenty of opportunities to ask questions and to discuss with the presenters and the audience (see Scientific Programme on May 11 for more information).

YOUNG SOCIAL EVENT
After a busy day of stimulating and inspiring presentations and information specifically for Young Professionals, time to relax a little and get to know your colleagues better over a beer. Details will be given during the sessions.
ESTRO School Symposium

ESTRO SCHOOL SYMPOSIUM
FRIDAY, 11 MAY 2012
18:00-19:00 • ROOM 120/121

18:00 ➔ Achievements and perspectives of the ESTRO School
Richard Pötter, Chair ESTRO Education and Training Committee

18:15 ➔ Education in radiation medicine: vision and philosophy
Rethy Chhem, Director of the Division of Human Health, IAEA

18:30 ➔ UEMS (European Union of Medical Specialists): aims, vision and focus for the coming years
Romuald Krajewski, President UEMS

18:45 ➔ ESTRO vision and strategy
• Focus on the education and training activities and the ESTRO School
Vincenzo Valentini, ESTRO President
Thursday 10 May 2012

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**TEACHING LECTURE**

**EXTRA CRANIAL STEREOTACTIC:**
FROM TECHNICAL AVAILABILITIES TO CLINICAL OPPORTUNITIES

**08:00 - 08:40 • Auditorium**

**Chair:** R. Miralbell (Switzerland)

08:00 > Extracranial stereotactic radiotherapy: from technical availabilities to clinical opportunities

**Speaker:** E. Lartigau (France)

---

**TEACHING LECTURE**

**WHEN IS HYPOFRACTIONATION MANDATORY?**
THE RADIobiologists’ AND CLINICAL POINT OF VIEW

**08:00 - 08:40 • Room 113-114**

**Chair:** P. Blanchard (France)

08:00 > When is hypofractionation mandatory? The radiobiologist’s and clinical point of view

**Speaker:** M. Joiner (USA)

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**TEACHING LECTURE**

**IMAGE-GUIDED ADAPTIVE RADIOTHERAPY (IGART): STATE OF THE ART**

**08:00 - 08:40 • Room 115**

**Chair:** F. Guedea (Spain)

08:00 > Image-guided adaptive radiotherapy (IGART): state of the art

**Speaker:** C. Glide-Hurst (USA)

---

**SYMPOSIUM**

**CLINICAL ACHIEVEMENTS IN EXTRACRANIAL STEREOTACTIC:**
FACTS OR PROMISES

**08:45 - 10:00 • Auditorium**

**Chair:** E. Lartigau (France)

Co-Chair: TBC

08:45 > Stereotactic ablative radiotherapy (SABR) as standard in early-stage NSCLC

**Speaker:** S. Senan (The Netherlands)

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09:10 > Stereotactic radiotherapy for the treatment of primary and secondary liver tumours

**Speaker:** X. Mirabel (France)

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**Thursday 10 May 2012**

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**TEACHING LECTURE**

**FLATTENING FILTER FREE PHOTON BEAMS**

**08:00 - 08:40 • Room 117**

**Chair:** T. Wiezorek (Germany)

08:00 > Flattening filter free photon beams

**Speaker:** D. Georg (Austria)

---

**TEACHING LECTURE**

**BIOSTATISTICS REFRESHER**

**08:00 - 08:40 • Room 116**

**Chair:** M. Aznar (Denmark)

08:00 > Biostatistics refresher

**Speaker:** I.R. Vogelius (Denmark)

---

**TEACHING LECTURE**

**THE DNA DAMAGE RESPONSE FOLLOWING IRRADIATION AND ITS SIGNIFICANCE**

**08:00 - 08:40 • Room 120-121**

**Chair:** C. Vens (The Netherlands)

08:00 > The DNA damage response following irradiation and its importance

**Speaker:** P. Jeggo (United Kingdom)

---

**TEACHING LECTURE**

**WHEN IS HYPOFRACTIONATION MANDATORY?**

**08:00 - 08:40 • Room 113-114**

**Chair:** P. Blanchard (France)

08:00 > When is hypofractionation mandatory? The radiobiologist’s and clinical point of view

**Speaker:** C. Petersen (Germany)

---

**TEACHING LECTURE**

**IMAGE-GUIDED ADAPTIVE RADIOTHERAPY (IGART): STATE OF THE ART**

**08:00 - 08:40 • Room 115**

**Chair:** F. Guedea (Spain)

08:00 > Image-guided adaptive radiotherapy (IGART): state of the art

**Speaker:** C. Glide-Hurst (USA)
### Thursday 10 May 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Room</th>
<th>Abs. Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:45</td>
<td>Rules for re-planning in adaptive radiotherapy</td>
<td>L. Dawson (Canada)</td>
<td>115</td>
<td>SP-0015</td>
</tr>
<tr>
<td>09:03</td>
<td>Can deformable registration approaches be reliable?</td>
<td>K. Brock (Canada)</td>
<td>115</td>
<td>SP-0016</td>
</tr>
<tr>
<td>09:22</td>
<td>Strategies for dose accumulation in adaptive radiation therapy</td>
<td>E. Heath (Canada)</td>
<td>115</td>
<td>SP-0017</td>
</tr>
<tr>
<td>09:41</td>
<td>Biological adaptation strategies</td>
<td>J. Kaanders (The Netherlands)</td>
<td>115</td>
<td>SP-0018</td>
</tr>
</tbody>
</table>

**SYMPOSIUM**

**HOT RESEARCH ISSUES IN ION BEAM THERAPY**

**Learning Objectives:**
1. To understand the limitations and potential of proton and carbon beams
2. To understand the potential and technology for single particle tomography
3. To understand why range uncertainties cannot be dealt with through simple PTV margins

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Room</th>
<th>Abs. Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:45</td>
<td>Ion species beyond protons and carbon ions</td>
<td>O. Jäkel (Germany)</td>
<td>117</td>
<td>SP-0019</td>
</tr>
<tr>
<td>09:10</td>
<td>Single particle tomography for verifying ion beam delivery</td>
<td>W. Enghardt (Germany)</td>
<td>117</td>
<td>SP-0020</td>
</tr>
<tr>
<td>09:35</td>
<td>Treatment planning: integrating robustness in optimization</td>
<td>T. Bortfeld (USA)</td>
<td>117</td>
<td>SP-0021</td>
</tr>
</tbody>
</table>
Thursday 10 May 2012

PROFFERED PAPERS
PHYSICS 1: INTRAFRACTION MOTION MANAGEMENT
08:45 - 10:00 • Room 116
Chair: P.R. Poulsen (Denmark)
Co-Chair: A. Latorre Musoll (Spain)

08:45 > Evaluation of a wavelet-based least mean square motion prediction algorithm for lung and liver patients
O. Blanck (Germany), R. Dürichen, F. Ernst, J. Dunst, D. Rades, G. Hildebrandt, A. Schweikard
OC-0022

08:55 > Gated MRI-linac (MRL) treatment for kidneys: inter breath hold variations
OC-0023

09:05 > Development of a dynamic tumor tracking irradiation system, Vero4DRT (MHI-TM2000), with a gimbaled X-ray head
A. Sawoda (Japan), Y. Matsumo, Y. Miyabe, M. Nakamura, T. Shiinoi, Y. Ishihara, N. Mukumoto, T. Mizowaki, M. Kobuko, T. Okaoa
OC-0024

09:15 > Comparison of a MLC and a HexaPOD tracking system for organ motion compensation during radiotherapy
M. J. Menten (Germany), M. Guckenberger, C. Herrmann, A. Krauß, S. Nill, U. Oelfke, J. Wilbert
OC-0025

09:25 > Correlation of optical surface mapping with CBCT for monitoring intra-fraction motion during SBRT for NSCLC
S. Kirwin (United Kingdom), J.R. Sykes, M. Naisbit, A. Needham, K. Franks, D.I. Thwaites
OC-0026

09:35 > Real-time segmentation of liver tumor markers during acquisition of CBCT projections and intra-treatment kV images
W. Fledelius (Denmark), E. Worm, M. Høyer, P.R. Poulsen
OC-0027

SYMPOSIUM
SYNTHETIC LEthal APPROACHES IN RT: EXPLOITING MUTATIONS
Learning Objectives:
1. To review the status of molecularly stratified trials in radiotherapy
2. To review the prospects for identifying new targets for modifying the radiation response
3. To review whether modification of the tumour microenvironment could be used as a strategy for radiosensitisation

08:45 - 10:00 • Room 120-121
Chair: G. McKenna (United Kingdom)
Co-Chair: K. Bargmann (Germany)

08:45 > Exploiting hypoxia dependent DNA repair defects
Speaker: R. Bristow (Canada)
SP-0029

09:10 > The use of functional screens to identify novel targets of radiosensitisation
Speaker: G. Higgins (United Kingdom)
SP-0030

09:35 > Synthetic lethal approaches for RAS using biologics
Speaker: K. Harrington (United Kingdom)
SP-0031

POSTER DISCUSSION: 1
CHALLENGES IN DOSIMETRY
09:00 - 09:45 • Poster Area
Chair: J. Cygler (Canada)
Co-Chair: A. Nisbet (United Kingdom)

09:45 > A fast and accurate method for field characterization in low and medium energy x-ray beams
D. Rodriguez Latorre (Spain), A. Latorre-Musoll, T. Eudaldo Puell, F. Carrasco de Fez, N. Jornet i Sala, A. Ruiz Martinez, T. Martinez Jurado, D. Macià Bros, M. Ribas Morales
PD-0032
Thursday 10 May 2012

> Microdosimetric spectra measured with a tissue-equivalent microcalorimeter in a low-energy proton beam

S. Galer (United Kingdom), H. Palmans, L. Hao, K. Kirkby, A. Nisbet

PD-0033

> An international code of practice for the dosimetry of small static photon fields


PD-0034

> Array dosimetry customized for stereotactic radiosurgery: square air core light guide technology

P.Z.Y. Liu (Australia), N. Suchowerska, P. Naseri, D.R. McKenzie

PD-0035

> Optimized output factor measurement method for Cyberknife collimators

J. Szanto (Canada), E. Henderson, E. Vandervoort

PD-0036

> High precision output factor results for the CyberKnife iris collimator small fields

A. Moutsatsos (Greece), L. Petrokkokinos, K. Zourari, C. Antypas, P. Papagiannis, P. Karaiskos, E. Georgiou, I. Seimenis, E. Pantelis

PD-0037

> Multi-institutional dosimetric commissioning of image-guided small animal irradiators

P. Granton (The Netherlands), P.E. Lindsay, A. Gasparini, J.J. Sonke, F. Verhaegen, D. Jaffray

PD-0038

> Validation of a convolution method for static non standard field dosimetry

D. Gonzalez-Castaño (Spain), M.A. Gago-Arias, J. Pardo, F. Gómez, V. Luna-Vega

PD-0039

Thursday 10 May 2012

> Dosimetric verification of Acuros XB in heterogeneities against experimental measurements and Monte Carlo methods

M. Bueno (Spain), M.A. Duch, D. Jurado Brugge, C. Munoz Montplet

PD-0040

PROFFERED PAPERS

CLINICAL 1: STEREOTACTIC
10:30 - 11:30 • Auditorium

CHAIR: M. Guckenberger (Germany)
CO-CHAIR: B. De Bari (Italy)

10:30 > Factors affecting intrafraction motion and baseline shifts in stereotactic ablative body radiotherapy for NSCLC

M.M.G. Rossi (The Netherlands), J.S.A. Belderbos, C. Chen, J.J. Sonke

OC-0041

10:42 > Stereotactic body radiotherapy for oligometastatic patients with single abdominal lymph node recurrent cancer

B. Jereczek-Fossa (Italy), G. Piperno, S. Ronchi, G. Catalano, C. Fodor, R. Cambria, P. Fossati, D. Zerini, C. Garibaldi, R. Orecchia

OC-0042

10:54 > Is SBRT an attractive option for unresectable liver metastases? Preliminary results from a phase II trial

S. Arcangeli (Italy), S. Castiglioni, A. Tozzi, P. Novarria, F. Alongi, S. Pentimalli, A.M. Ascolese, P. Mancosu, M. Scorsetti

OC-0043

11:06 > Efficacy of stereotactic body radiation therapy for primary renal cell carcinoma

J. Wurzer (USA), B. Kimmel, G. Braga, A. Pagnani

OC-0044

11:18 > Geometric and dosimetric accuracy of frame-less image-guided radiosurgery in clinical practice

M. Guckenberger (Germany), J. Roesch, K. Baier, R. Sweeney, M. Flentje

OC-0045
Thursday 10 May 2012

**SYMPOSIUM**

**ADAPTIVE RADIOThERAPY: HOW TO HANDLE THE TUMour MODIFICATION ALONG THE TREATMENT**

**LEARNING OBJECTIVES:**
1. To understand the anatomical and tumour changes and their dosimetric consequences during radiotherapy for head and neck, lung and gynaecological tumors
2. To appreciate the various clinical and sectional imaging modalities, planning and delivery techniques and clinical applications for adaptive radiotherapy
3. To be able to discuss the advantages, current challenges, future potentials and limitations of adaptive radiotherapy

**10:30 - 11:30 • Room 115**

**Chair:** M. Verheij (The Netherlands)

**Co-Chair:** C. Munoz Montplet (Spain)

- **10:30 >** Adaptive radiotherapy of head and neck cancer, with integration of biological information  
  **Speaker:** C. Grau (Denmark)  
  **OC-0052**

- **10:50 >** Lung  
  **Speaker:** W. van Elmpt (The Netherlands)  
  **OC-0053**

- **11:10 >** Gynaecology  
  **Speaker:** R. Pötter (Austria)  
  **OC-0054**

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**PROFFERED PAPERS**

**PHYSICS 2: PROTON THERAPY**

**10:30 - 11:30 • Room 117**

**Chair:** T. Bortfeld (USA)

**Co-Chair:** TBC

- **10:30 >** Graphite calorimetry in a clinical proton beam  
  **Speakers:** R. Thomas (United Kingdom), N. Lee, M. Bailey, H. Palmins, D. Shipley, S. Rossumme, L. Al-Sulaiti, A. Kacperek  
  **OC-0055**

- **10:40 >** Correction of optical artifacts in a liquid scintillator dosimetry system  
  **Speakers:** S. Beddar (USA), D. Robertson, L. Archambault, R. Mohan  
  **OC-0056**
Thursday 10 May 2012

10:50 > Commissioning and quality assurance of scanned proton beams produced by a synchrotron for particle radiotherapy
   M. Ciocca (Italy), A. Mairani, A. Mirandola, S. Molinelli, G. Vilches Freixas, M. Donetti, R. Orecchia
   OC-0057

11:00 > Experimental verification of rescanning and gating for moving tumours with fast proton spot scanning
   A. Schätti (Switzerland), M. Zakova, D. Meer, T. Lomax
   OC-0058

11:10 > Intrafractional online motion targeting - beam's eye view imaging system for scanned proton therapy
   Y. Zhang (Switzerland), M. Zakova, A.K. Knopf, S. Safai, T. Lomax
   OC-0059

11:20 > Experimental evaluation of prompt gamma imaging with a slit camera for real time range control in proton therapy
   J. Smeets (Belgium), F. Roellinghoff, D. Prieels, F. Stichelbaut, A. Benilov, P. Busca, C. Fiorini, R. Pelaso, T. Frizzi, J.C. Dehaes
   OC-0060

PROFFERED PAPERS

PHYSICS 3: QC AND AUDITS FOR NEW TECHNIQUES AND TECHNOLOGY
10:30 - 11:30 • Room 116
CHAIR: C. Clark (United Kingdom)
CO-CHAIR: T. Eudaldo (Spain)

10:30 > VMAT quality assurance (QA): software tool to analyse linear accelerator parameters accuracy
   C. Lafond (France), C. Odin, J. Even, J.P. Manens
   OC-0061

10:40 > 3D in vivo verification of VMAT treatments using EPID dosimetry
   OC-0062
Thursday 10 May 2012

10:50 > TGFβ Receptor I inhibitor radiosensitizes Glioblastoma by targeting CD44high/ID1+ glioma initiating cells
A. González-Juncà (Spain), X. Maldonado, M. Beltran, F. Martinez Ricarte, J. Rodon, J. Seoane
OC-0069

11:00 > Radiosensitization of murine sarcoma tumors with intratumoral Interleukin-12 gene electrotransfer
A. Sedlar (Slovenia), S. Kranjc, M. Cemazar, A. Coer, T. Dolinsek, G. Sersa
OC-0070

11:10 > Inactivation of HNSCC cells by 90Y-labeled Cetuximab strictly depends on number of induced DNA double-strand breaks
OC-0071

11:20 > Rapamycin-induced activation of Akt prevents its radiosensitizing effect on human solid tumor cells
M. Bechtel (Germany), M. Toulany, H.P. Rodemann
OC-0072

PROFFERED PAPERS
RTT 1: PATIENT CARE AND INFORMATION
10:30 - 11:30 • Room 118-119
Chair: A. Baker (United Kingdom)
Co-Chair: S. Bermejo (Spain)
10:30 > Patient satisfaction with the radiotherapy related information they received
P. Nickola (Ireland Republic of), J. Cunningham, M. Coffey
OC-0073

10:40 > Can patients be better prepared and more satisfied during the course of radiation therapy by using iPad’s?
C. Wilde Björling (Sweden), M. Lagerlund, M. Östlund, P. Johansson, C. Axelsson, S. Johnson
OC-0074

Thursday 10 May 2012

11:50 > Awareness of cervical cancer and factors that influence smear attendance in women within the screening age criteria
E. Nic An Ghaeirr (Ireland Republic of), A. Craig
OC-0075

11:00 > UK National Voluntary Reporting and Analysis of Radiotherapy Errors and Near Misses (2009-2011)
U. O’Doherty (United Kingdom)
OC-0076

11:10 > A qualitative study of work load and coping strategies of RTT’s in radiotherapy
OC-0077

11:20 > Improving patient safety during radiation therapy using human factors methods
OC-0078
Thursday 10 May 2012

> Impact of PET reconstruction settings for quantification and delineation of lung lesions in radiotherapy
I. Rausch, B. Knäusl (Austria), A. Hirtl, H. Bergmann, R. Dudczak, D. Georg PD-0083

> Effects of MRI scan position on CT image registration and target delineation for oropharynx cancer VMAT patients

> Advances in MRI for elective treatment of lymph nodes and cranial nerves in head and neck cancer

> Automatic segmentation of heart evaluated with multi-institution inter-observer variation
E. Lorenzen (Denmark), C. Brink PD-0086

> X-ray fluorescence CT for gold nanoparticles and Cisplatin
M. Bazalova (USA), Y. Kuang, G. Pratx, L. Xing PD-0087

- EMANUEL VAN DER SCHUEREN AWARD LECTURE
QUALITY AND SAFETY IN RADIOTHERAPY
12:30 - 13:00 • Auditorium
Chair: V. Valentini (Italy)
12:30 > Quality and safety in radiotherapy
Speaker: P. Scalliet (Belgium) SP-0090

- JOINT SYMPOSIUM
ESTRO-ECCO: ETHICS IN PROFESSIONAL LIFE
Learning Objectives:
1. To have a value-based platform to manage the relationship between science and technology on one side and the global social responsibility on the other side, in a time of limited resources
2. To become aware of the ethical values encountered in the daily life management of a department of radiation oncology
3. To focus on the implications of science progression and the ethical values involved in dissemination of science and that of the management of a scientific society

14:30 - 15:45 • Auditorium
Chair: V. Valentini (Italy)
Co-Chair: M. Baumann (Germany)
14:30 > Ethic values: do they belong in a museum or your daily briefcase?
Speaker: F. Botturi (Italy) SP-0091

14:48 > Ethic values in the dissemination of science
Speaker: J. Overgaard (Denmark) SP-0092

15:06 > Ethical values in managing a department
Speaker: K. Haustermans (Belgium) SP-0093

15:24 > Ethic values and scientific societies
Speaker: M. Baumann (Germany) SP-0094

- PRESIDENTIAL SYMPOSIUM
THE REVERSE ANGLE PERSPECTIVE
11:45 - 12:30 • Auditorium
Chair: V. Valentini (Italy)
Co-Chair: J. Bourhis (France)
11:45 > «Rapid learning health care» & «randomised trial»: are the two approaches antagonistic or complementary?
Speaker: P. Lambin (The Netherlands) SP-0088

12:05 > What is the scientific community expecting from ESTRO to build a multidisciplinary platform in Europe?
Speaker: C. van de Velde (The Netherlands) SP-0089

- Thursday 10 May 2012
Thursday 10 May 2012

SYMPOSIUM

HYPOFRAC TONATION AND PARTIAL BREAST RADIOTHERAPY

LEARNING OBJECTIVES:
1. Adjustments to the number and size of fractions are not enough; inter-fraction interval, treatment volume and overall time are also clinically relevant.
2. There is evidence for a strong volume effect for late adverse effects after PBRT.
3. High single doses are well tolerated by the breast, and appear to be effective in reducing local relapse risk.
4. Bio-effect models can be constructed to help design accelerated PBRT schedules.

14:30 - 15:45 • Room 113-114
CHAIR: J.R. Yarnold (United Kingdom)
CO-CHAIR: R. Cabrera (Spain)

14:30 > Hypofractionation and PBRT: what do we need to think about?
Speaker: N. Somaiah (United Kingdom)  SP-0095

14:48 > Evidence of volume effects for normal tissue and tumour responses
Speaker: E. Van Limbergen (Belgium)  SP-0096

15:06 > IORT update: what are the limits of total dose and volume?
Speaker: R. Orecchia (Italy)  SP-0097

15:24 > Bio-effect models of hypofractionation in accelerated PBRT
Speaker: S. Bentzen (USA)  SP-0098

SYMPOSIUM

BRACHYTHERAPY BOOST OR SIB:
TREATMENT OF CHOICE FOR PROSTATE CANCER?

LEARNING OBJECTIVES:
1. To appreciate the contribution and utility of multi-modality parametric imaging for target volume definition and image guided strategies.
2. To understand the rationale, case selection and evidence for HDR brachytherapy for dose escalation.

14:30 - 15:45 • Room 115
CHAIR: V. Khoo (United Kingdom)
CO-CHAIR: B. Pinar (Spain)

14:30 > Promises and pitfalls of functional imaging for focal dose escalation in prostate cancer
Speaker: G. Crehange (France)  SP-0099

14:55 > Comparison between brachytherapy and EBT with X-rays and protons. Dose distributions and peripheral doses
Speaker: D.A. Mazal (France)  SP-0100

15:20 > Emerging data for high risk patients
Speaker: P. Hoskin (United Kingdom)  SP-0101

LOOK INSIDE

CUTTING EDGE TECHNOLOGY:
CAN WE DELIVER THE DOSE DISTRIBUTION WE PLAN?

LEARNING OBJECTIVES:
1. To consider the current limitations on defining volumes and dose distributions, both technology-related and inherent.
2. To consider the limitations and uncertainties on delivering the required dose distributions with current technology.
3. To discuss the potential of technology developments to impact on and mitigate limitations and uncertainties.
4. To compare and contrast relevant factors and issues between radiotherapy treatment modalities (external beam MV X-ray, ion beam therapy, brachytherapy).

14:30 - 15:45 • Room 117
CHAIR: D. Georg (Austria)
CO-CHAIR: V. Hernandez (Spain)

14:30 > Limitations in delivery of the required dose distributions for MV X-ray EBRT with current and developing technology
Speaker: D.I. Thwaites (Australia)  SP-0102

14:55 > Ion beam therapy
Speaker: C. Bert (Germany)  SP-0103
Thursday 10 May 2012

15:20 > Cutting edge technology: Can we deliver the dose distribution we plan in brachytherapy?
Speaker: D. Baltas (Germany) SP-0104

■ JOINT SYMPOSIUM
ESTRO-EFOMP: SHARING INFORMATION AND COMMUNICATION IN RADIATION ONCOLOGY
Learning Objectives:
1. To become familiar with the state of art of Networking in Radiotherapy following an integrated approach between medical physicist and radiation oncologists in multidisciplinary approach
2. To understand how to evaluate the critical aspect of network architecture and transmission standards from the images to treatment and dosimetric verification, the state of art and future developing of radiation oncology technical framework following the IHE RO profile and DICOM standard in radiotherapy
3. To appreciate the opportunities and the risks for networking and connectivity in radiotherapy, taking into account that the International advanced computer network should be a new future scenario in radiotherapy

14:30 - 15:45 • Room 116
Chair: A. Torresin (Italy)
Co-Chair: R. Garcia (France)

14:30 > Workflow and data transfer in modern radiotherapy clinics; taking a step towards paperless network architectures
Speaker: M. Enmark (Sweden) SP-0105

14:50 > Improving standards for interoperability in radiation oncology: DICOM and IHE-RO
Speaker: B. Curran (USA) SP-0106

15:10 > Networking and connectivity in radiotherapy: opportunities and risks
Speaker: W. van der Putten (Ireland Republic of) SP-0107

15:25 > International advanced computer network for research and decision supporting software
Speaker: A. Dekker (The Netherlands) SP-0108

Thursday 10 May 2012

14:30 - 15:45 • Room 120-121
Chair: M.H. Barcellos-Hoff (USA)
Co-Chair: A.E. Kiltie (United Kingdom)

14:30 > Radiation-induced changes in anti-tumor immunity
Speaker: W. McBride (USA) SP-0109

14:55 > TGF-β signalling orchestrates late renal toxicity by regulating the immune response after irradiation
Speaker: M. Scharpfenecker (The Netherlands) SP-0110

15:20 > Effects of modulated immune responses on epithelial radiation effects during fractionated irradiation
Speaker: W. Dött (Germany) SP-0111

■ SYMPOSIUM
RADIOThERAPY AND THE IMMUNE SYSTEM, IMMUNOLOGICAL ASPECTS OF TREATMENT RESPONSE TO IONISING RADIATION
Learning Objectives:
1. To understand that radiation acts on the immune system function
2. To understand the contribution of the immune system to normal tissue toxicity
3. To understand the role of the immune system in tumor response to radiation therapy

14:30 - 15:45 • Room 120-121
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Speaker: W. Dött (Germany) SP-0111

■ SYMPOSIUM
ADAPTIVE RADIOTHERAPY: CHANGING THE PRACTICE
Learning Objectives:
1. To understand the rationale of ART and clarify the clinical concept of ART
2. To understand the term ART used in a degenerate way with insight into the logistic challenges and become familiar with the terminology used to describe the ART process, to distinguish which processes belong to the disciplines of IGRT of ART
3. To be able to read and understand a flow chart for ART prescription and become familiar with dose reporting in ART
4. To understand the planning challenges of consecutive phases in ART
5. To understand the uncertainties in dose summation of consecutive plans using rigid or non-rigid image co-registration methods

14:30 > Cutting edge technology: Can we deliver the dose distribution we plan in brachytherapy?
Speaker: D. Baltas (Germany) SP-0104

14:50 > Improving standards for interoperability in radiation oncology: DICOM and IHE-RO
Speaker: B. Curran (USA) SP-0106

15:10 > Networking and connectivity in radiotherapy: opportunities and risks
Speaker: W. van der Putten (Ireland Republic of) SP-0107

15:25 > International advanced computer network for research and decision supporting software
Speaker: A. Dekker (The Netherlands) SP-0108
Thursday 10 May 2012

14:30 - 15:45 • Room 118-119
Chair: B. Speleers (Belgium)
Co-Chair: E. Fernández-Velilla (Spain)

14:30 > ART: clinical application
Speaker: N. Di Muzio (Italy)
SP-0112

14:48 > ART in Head & Neck: how it affects the practice
Speaker: W. De Neve (Belgium)
SP-0113

15:06 > ART by gating
Speaker: C. Garibaldi (Italy)
SP-0114

15:24 > ART in BT – adaptive image guided BT for gynecological tumors using MRI images – clinical and physics aspects
Speaker: D. Berger (Austria)
SP-0115

POSTER DISCUSSION: 3
PROSTATE CANCER
14:45 - 15:30 • Poster Area
Chair: TBC
Co-Chair: F. Sedlmayer (Austria)

> High incidence of aberrant lymph node metastases on MR lymphography in prostate cancer patients
PD-0116

> Choline PET-CT and diffusion-weighted MRI for nodal staging in prostate cancer at high risk for nodal metastases
PD-0117

Thursday 10 May 2012

> Radioprotective effect of calcium channel blockers against late rectal bleeding in prostate cancer
M. Massaccesi (Italy), V. Picardi, G. Macchia, F. Deodato, C. Digesù, M. Ferro, A. Di Lallo, V. Valentini, N. Cellini, A.G. Morganti
PD-0118

> Quality of life (QoL) for prostate cancer after prostatectomy vs brachytherapy vs EBRT with a follow-up of 5 years
PD-0119

> Loss of bone mass in androgen-deprivation adjuvant hormonal therapy in high risk localized prostate cancer patients
PD-0120

> Use of pre-op MRI and 3D prostate cancer maps- to improve CTV definition for post-operative radiation
PD-0121

> Neural-network-based prediction of late faecal incontinence after 3D-CRT for prostate cancer
S. Tomatis (Italy), M. Carrara, T. Rancati, C. Fiorino, G. Fellin, V. Vavassori, E. Cagna, G. Girelli, F. Tortoreto, R. Valdagni
PD-0122

> Androgen receptor FISH assay predicts poor survival in early human prostate cancer
PD-0123
Thursday 10 May 2012

PROFFERED PAPERS

CLINICAL 3: HIGH TECH AND BIOLOGICAL PERSPECTIVES
IN DIFFERENT TUMOUR SITE
16:15 - 17:15 • Auditorium
Chair: J.W. Leer (The Netherlands)
Co-Chair: J.L. Monroy Anton (Spain)

16:15 > Chemo-radiation in advanced stage carcinoma cervix.
A phase iii randomized trial: results of 1st interim analysis
U. Mahantshetty (India), S.K. Shrivastava, H.B. Tongaonkar,
S. Gupta, R. Engineer, R.A. Kerkar, A. Maheshwari,
S. Chopra, J. Ghosh, K.A. Dinshaw
OC-0124

16:25 > Long-term outcomes of a prospective study of post-therapy
PET after chemoradiation of cervical cancer
S. Siva (Australia), S. Deb, M. Bressel, S. Gill, S. Fox, R. Hicks,
K. Narayan
OC-0125

16:35 > Simultaneous integrated boost in cervix cancer:
too much uncertainty
F.G. Herrera (Switzerland), E. Delikgoz-Soykut, S. Callaway,
J.L. Soares-Rodrigues, M. Coskun, L. Porta, L. Heym, R. Moeckli,
M. Ozsahin
OC-0126

16:45 > Field size reduction to involved node radiotherapy as part of
combined modality treatment is safe for aggressive NHL.
P. Poortmans (The Netherlands), M. Verhappen, J. Raemaekers,
E. Raaijmakers
OC-0127

16:55 > Vestibular Schwannoma: Linac-based stereotactic radiotherapy
in 250 patients
H. Badakhshi (Germany), D. Boehmer, R. Wurm,
S. Muetlner, V. Budach
OC-0128

17:05 > Impact of randomized trials on population based referrals
for adjuvant radiotherapy after radical prostatectomy
H. Quan (Canada), D. Suderman, K. Guilbert, P. Lambert,
G. Mak, A. Ong, A. Chowdhury
OC-0129

Thursday 10 May 2012

PROFFERED PAPERS

CLINICAL 4: BREAST
16:15 - 17:15 • Room 113-114
Chair: S. Bodis (Switzerland)
Co-Chair: A. Cecconi (Italy)

16:15 > 18F-FDG PET/CT for the assessment of locoregional lymph
node involvement in stage II and III breast cancer
B.B. Koolen, W.V. Vogel (The Netherlands), R.A. Valdés Olmos,
RH. Elkhuizen, M. Vrancken Peeters, S. Rodenhuis,
E.J.T.H. Rutgers
OC-0130

16:25 > Accelerated partial breast irradiation with IMRT:
3-years interim analysis of a Phase III randomized clinical trial
L. Livi (Italy), I. Meattini, C. Saieva, D. Franceschini, F. Meacci,
F. Franzese, V. Scotti, C. De Luca Cardillo, D. Greto, G. Biti
OC-0131

16:35 > Hyperfractionated radical radiotherapy in stage IIIB breast
cancer unresponsive to systemic therapy
P. Carmana-Vega (Spain), L.A. Henríquez-Hernández, B. Pinar,
M. Lloret, P.C. Lara
OC-0132

16:45 > Breast cancer prognosis is altered by TRIB3 via hypoxia sensitivity
M. Wennemers (The Netherlands), J. Bussink, F.C.G.J.
Sweep, P.N. Span
OC-0133

16:55 > Local excision with or without radiotherapy in ductal carcinoma
in situ: treatment and prognosis after a recurrence
M. Donker, S. Litière, G. Werutsky, J.P. Julien, I. Fentiman,
R. Agresti, P. Rouanet, C. Tunon de Lara, E.J.T.H. Rutgers,
P. Poortmans (The Netherlands)
OC-0134

17:05 > Can patient reported outcome measures replace clinical
assessments in breast radiotherapy trials?
J.S. Haviland (United Kingdom), M. Sydenham, J. Mills,
P. Hopwood, J.M. Bliss, J.R. Yarnold, on behalf of the START
Trialists’ Group
OC-0135
Thursday 10 May 2012

DEBATE
THIS HOUSE BELIEVES THAT BRACHYTHERAPY IS THE BEST TECHNIQUE FOR PARTIAL BREAST IRRADIATION
16:15 - 17:15 • Room 115
Chair: E. Van Limbergen (Belgium)
Co-Chair: I. Monteiro Grillo (Portugal)

16:15 > For the motion - brachytherapy for partial breast irradiation - facts and myths
Speaker: V. Strnad (Germany)  SP-0136

16:35 > Against the motion
Speaker: H. Bartelink (The Netherlands)  SP-0137

16:55 > Conclusions for the motion - brachytherapy is the best technique for partial breast irradiation
Speaker: C. Polgár (Hungary)  SP-0138

17:05 > Conclusions against the motion
Speaker: C. Bourgier (France)  SP-0139

DEBATE
THIS HOUSE BELIEVES THAT PROCESS-BASED QUALITY MANAGEMENT REPLACES TODAY’S QUALITY CONTROLS
Learning Objectives:
1. Identify the strengths and weaknesses with existing systems of Quality Assurance/Control
2. Describe common process-based quality management tools
3. Discuss pros and cons of process-based quality management tools in radiotherapy
4. Identify process-based quality management tools that can be useful in radiotherapy

16:15 - 17:15 • Room 117
Chair: C. Ceberg (Sweden)
Co-Chair: M. Beltran (Spain)

16:15 > For the motion
Speaker: B. Thomadsen (USA)  SP-0140

16:35 > Against the motion
Speaker: E. Aird (United Kingdom)  SP-0141

PROFFERED PAPERS
PHYSICS 4: ADAPTIVE RADIOTHERAPY
16:15 - 17:15 • Room 116
Chair: B. Heijman (The Netherlands)
Co-Chair: C. Picon (Spain)

16:15 > A dose accumulation study of adaptive plan selection vs. re-optimisation in bladder radiotherapy
Speaker: A. Vestergaard (Denmark), J. Søndergaard, L.P. Muren, U.V. Elstrøm, M. Høyer, J.B. Petersen  OC-0142

16:25 > Direct dose deformation for intensity-modulated radiotherapy using a multi-leaf collimator (MLC)
Speaker: R. Topolnjak (The Netherlands), E.J. Rijkhorst, J. de Boer, R. Bohoslavsky, A. Mencarelli, M. van Herk, J.J. Sonke  OC-0143

16:35 > Automated decision rules for adaptive RT to reduce differential motion of multiple anatomical regions.
Speaker: F. Koetsveld (The Netherlands), J.J. Sonke, S. van Kranen, E.E. Schaake, S. van Beek, P. Remeijer  OC-0144

16:45 > CBCT Adaptive protocol to manage the interfraction displacement of seminal vesicles
Speaker: L. Vicenzi, G. Mantello (Italy), F. Cucciarelli, F. Fenzi, S. Costantini, L. Fabbietti, M. Giacometti, M. Valenti, M. Cardinale, S. Maggi  OC-0145

16:55 > Adaptive radiotherapy for primary lung tumours and mediastinal lymph nodes
Speaker: E.E. Schaake (The Netherlands), J.S.A. Belderbos, W.A. Buikhuisen, J.J. Sonke  OC-0146

17:05 > Clinical implementation of the plan-of-the-day concept for IMRT of cervical cancer
Speaker: M.S. Hoogeman (The Netherlands), S. Quint, M.L. Bondar, J.W. Mens, G. Dhawtal, B.J. Heijmen  OC-0147
Thursday 10 May 2012

DEBATE

This House believes that daily verification and image analysis is solely the responsibility of the radiation oncologist

Learning Objectives:
1. Identifying the proposed dilemmas of responsibilities, when implementing (new) position verification procedures
2. Insight in arguments around position verification responsibilities, including cost effectiveness

16:15 - 17:15 • Room 118-119
Chair: M. Mast (The Netherlands)
Co-Chair: E. Lartigau (France)
Co-Chair: R. Moeckli (Switzerland)

16:15 > For the motion
Speaker: J. Kuipers (The Netherlands) SP-0154

16:35 > Against the motion
Speaker: A. Osztavics (Austria) SP-0155

POSTER DISCUSSION: 4
LUNG AND STEREOTACTIC
16:15 - 17:00 • Poster Area
Chair: M. Scorsetti (Italy)
Co-Chair: G. Kantor (France)

> Stereotactic body radiotherapy using volumetric modulated arc therapy in lung metastatic patients
P. Navarrua (Italy), A.M. Ascolese, E. Clerici, S. Castiglioni, P. Alongi, A. Tozzi, S. Pentimalli, S. Arcangeli, P. Mancosu, M. Scorsetti PD-0156

> Imaging of EGFR with USPECT in head and neck cancer xenografts with 111-In-labeled Cetuximab-\(\text{F(ab')}^2\)

> EGFR-inhibition and radiotherapy in head and neck cancer xenografts: hypoxia, proliferation and tumor growth delay

Thursday 10 May 2012

PROFFERED PAPERS
RADIOBIOLOGY 2: HEAD AND NECK
16:15 - 17:15 • Room 120-121
Chair: P. Span (The Netherlands)
Co-Chair: M. Pinkawa (Germany)

16:15 > Head and neck cancer recurrence density in relation to FDG-PET and clinical IMRT target volumes

16:25 > HPV, smoking and RT-outcome in advanced OPC treated without chemotherapy - analysis of DAHANCA patients

16:35 > Predictive value of CAIX expression and staining pattern in patients treated in the phase III randomised ARCON trial

16:45 > P16 in head and neck cancer: a marker of impaired HIF1a function and decreased hypoxia tolerance?
E. Van Limbergen (Belgium), R. Dok, E. Hauben, S. Nuyts OC-0151

16:55 > Imaging of EGFR with USPECT in head and neck cancer xenografts with 111-In-labeled Cetuximab-\(\text{F(ab')}^2\)

17:05 > EGFR-inhibition and radiotherapy in head and neck cancer xenografts: hypoxia, proliferation and tumor growth delay
Thursday 10 May 2012

17:50 > An initial experience of dynamic tumor tracking irradiation with real-time monitoring using vero4DRT (MHI-TM2000)
Y. Matsuo (Japan), A. Sawada, N. Ueki, Y. Miyabe, M. Nakamura, S. Yano, S. Kaneko, T. Mizowaki, M. Kokubo, M. Hiraoka
OC-0166

18:00 > Stem cell sparing radiotherapy of head and neck cancer to preserve salivary gland function
P. van Luijk (The Netherlands), S. Pringle, J.O. Deasy, V.V. Moiseenko, H. Faber, H.P. van der Laan, S. Brandenburg, J.A. Langendijk, J. Wu, R.P. Coppes
OC-0167

18:10 > On-line digital tomosynthesis for patient stability monitoring during VMAT delivery for SABR of lung cancer
M. van Herk (The Netherlands), A. van der Reijden, M. Rossi, J.J. Sonke
OC-0168

Thursday 10 May 2012

17:30 - 18:30 • Auditorium
Chair: D. Hollywood (Ireland Republic of)
Co-Chair: N. Jornet (Spain)

17:30 > Metastasectomy not better than SABR for lung oligometastases in a single institution cohort (n=110)
OC-0164

17:40 > Development of a practical prediction model for overall survival from stage III lung cancer
R. Lambin, C. Oberije (The Netherlands), R. Houben, D. De Ruyscher, G. Nalbantov
OC-0165

PROFFERED PAPERS
HIGHLIGHTS OF PROFFERED PAPERS
17:30 - 18:30 • Auditorium
Chair: D. Hollywood (Ireland Republic of)
Co-Chair: N. Jornet (Spain)

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OC-0165
Friday 11 May 2012

TEACHING LECTURE
CURRENT PRACTICE AND MOVING POINTS: PAEDIATRICS
08:00 - 08:40 • Auditorium
Chair: F. Saran (United Kingdom)
08:00 > Current practice and moving points: paediatrics
Speaker: K. Dieckmann (Austria) SP-0169

TEACHING LECTURE
DECISION SUPPORT SYSTEMS:
REQUIREMENTS, IMPLEMENTATION AND EVALUATION
08:00 - 08:40 • Room 115
Chair: P. Poortmans (The Netherlands)
08:00 > Decision support systems: requirements, implementation and evaluation
Speaker: R. van Stiphout (The Netherlands) SP-0170

TEACHING LECTURE
UNCERTAINTIES IN FUNCTIONAL IMAGING
AND THEIR IMPACT ON RADIOTHERAPY TARGET DEFINITION
08:00 - 08:40 • Room 117
Chair: G. Liney (United Kingdom)
08:00 > Uncertainties in functional imaging and their impact on radiotherapy target definition
Speaker: R. Jeraj (Slovenia) SP-0171

TEACHING LECTURE
STREAMLINING IMRT QA
08:00 - 08:40 • Room 116
Chair: M. Tomsej (Belgium)
08:00 > Streamlining IMRT QA
Speaker: D. Low (USA) SP-0172

Friday 11 May 2012

TEACHING LECTURE
CLINICAL RELEVANCE OF TUMOUR MICRO-ENVIRONMENT
AND METABOLISM
08:00 - 08:40 • Room 120-121
Chair: B. Wouters (Canada)
08:00 > Clinical relevance of tumour micro-environment and metabolism
Speaker: W. Mueller-Klieser (Germany) SP-0173

TEACHING LECTURE
INCREASED NUMBER OF ELDERLY CANCER PATIENTS:
GENERAL OVERVIEW
08:00 - 08:40 • Room 118-119
Chair: H. McNair (United Kingdom)
08:00 > Increased number of elderly patients with cancer: a general overview
Speaker: V. Lemmens (The Netherlands) SP-0174

TEACHING LECTURE
HOW TO DESIGN YOUR COMPARATIVE CLINICAL TRIAL?
08:00 - 08:40 • Room 122-123
Chair: TBC
08:00 > How to design your comparative clinical trial?
Speaker: L. Collette (Belgium) SP-0175

JOINT SYMPOSIUM
ESTRO-PROS: COMPLEX MULTI-MODEL APPROACHES: PAEDIATRICS
Learning Objectives:
1. To update areas of research in paediatric radiation oncology
2. To learn how particle therapy is becoming more relevant in the treatment of some paediatric patients
3. To understand the treatment approaches in medulloblastoma regarding volume, dose and biology
4. To review the use of radiotherapy in the treatment of neuroblastoma
Friday 11 May 2012

08:45 - 10:00 • Auditorium

Chair: J. Giralt (Spain)
Co-Chair: TBC

08:45 > New perspectives with protons and other particles
SPEAKER: B. Timmermann (Germany)  SP-0176

09:03 > New knowledge on late effects:
second primary cancers, cardiac and cerebrovascular diseases
SPEAKER: N. Haddy (France)  SP-0177

09:22 > Update on the current European management of medulloblastoma
SPEAKER: F. Saran (United Kingdom)  SP-0178

09:41 > Update on neuroblastoma
SPEAKER: L. Gandola (Italy)  SP-0179

SYMPOSIUM

EMERGING IMAGING TECHNOLOGIES: APPLICATIONS IN RADIATION ONCOLOGY

LEARNING OBJECTIVES:
1. To become familiar with recent technical and biological developments in medical imaging
2. To become familiar with challenges and opportunities for the application of new imaging developments in radiation oncology

08:45 - 10:00 • Room 113-114

Chair: L.P. Muren (Denmark)
Co-Chair: M. Lloret (Spain)
Co-Chair: TBC

08:45 > Radiomics: extracting advanced features from medical imaging
SPEAKER: H. Aerts (The Netherlands)  SP-0183

09:03 > New tracers
SPEAKER: I. Carrió Gasset (Spain)  SP-0184

09:21 > Dual energy CT: current clinical status.
SPEAKER: J. Wildberger (The Netherlands)  SP-0185

09:39 > Hybrid imaging with PET and MRI
SPEAKER: G. von Schulthess (Switzerland)  SP-0186

Friday 11 May 2012

09:10 > Breast cancer in young women: adjuvant therapy and fertility considerations
SPEAKER: H.A. Azim Jr (Belgium)  SP-0181

09:35 > Combined treatment rectal: young adult patients
SPEAKER: H. Rutten (The Netherlands)  SP-0182

JOINT SYMPOSIUM

ESTRO-ESMO-ESSO: YOUNG ADULT PATIENTS: THE MAXIMUM DELIIVERABLE OR THE MINIMUM EFFECTIVE TREATMENT

LEARNING OBJECTIVES:
1. To perceive the peculiarity of tumor behavior in young adult patients; the Hodgkin, breast and rectal cancer model
2. To understand the meaning of aggressive treatment in young adult patients; the Hodgkin, breast and rectal cancer model
3. To evaluate the long term cost of aggressive treatment in young adult patients; the Hodgkin, breast and rectal cancer model

08:45 - 10:00 • Room 113-114

Chair: V. Valentini (Italy)
Co-Chair: P. Naredi (Sweden)
Co-Chair: M. Piccart (Belgium)

08:45 > Combined treatments in Hodgkin disease: the RT optimal dose
SPEAKER: L. Specht (Denmark)  SP-0180
SYMPOSIUM
DOSE ASSESSMENT DURING TREATMENT:
TOWARDS GREATER CONTROL OF THE DOSE DELIVERED TO THE PATIENT

Learning Objectives:
1. To understand the clinical importance of dose assessment during the treatment
2. To have an overview the state of art in methods to assess the dose delivered to the patient
3. To discuss the pros and cons of different approaches to reconstruct the delivered dose

08:45 - 10:00 • Room 116

Chair: N. Jornet (Spain)
Co-Chair: P. Galan Montenegro (Spain)

08:45 > Closing the loop of radiation therapy: dose reconstruction using dynamic log files and CBCT
Speaker: L. Xing (USA) SP-0194

09:03 > Dose reconstruction using EPID and CBCT
Speaker: S. Nijsten (The Netherlands) SP-0195

09:21 > Dose reconstruction in tomotherapy
Speaker: R. Moeckli (Switzerland) SP-0196

09:39 > Implantable MOSFET dosimeters
Speaker: S. Beddar (USA) SP-0197

SYMPOSIUM
TUMOUR MICROENVIRONMENT: NOVEL BIOLOGY AND NOVEL TARGETS

Learning Objectives:
1. To understand what effects oncogenic signalling inhibition can have on the tumor microenvironment and radiation sensitivity
2. To understand the effects of hypoxia on signalling pathways and epigenetic regulation of tumor cell behaviour
3. To understand how circulating bone marrow cells play a role in the radiosensitivity of tumors

08:45 - 10:00 • Room 120-121

Chair: J. Kaanders (The Netherlands)
Co-Chair: R. Bristow (Canada)

08:45 > Altering the tumor microenvironment to improve radiation therapy
Speaker: R.J. Muschel (United Kingdom) SP-0198
Friday 11 May 2012

09:10  >  Novel mechanisms of oxygen sensing and adaptation to hypoxic stress  
Speaker: B. Wouters (Canada)  
SP-0199

09:35  >  Targeting vasculogenesis to improve radiation response  
Speaker: M. Brown (USA)  
SP-0200

**SYMPOSIUM**  
**RADIOThERAPY IN ELDERLY: WHERE ARE WE AIMING FOR IN THE FUTURE**  
**Learning Objectives:**  
1. To understand that in the next future the number of elderly (and frail) cancer patients referred for radiotherapy will strongly increase  
2. To improve radiotherapy protocols and communication approach with elderly cancer patients emphasizing the differences with the other patients  
3. To investigate on the different modalities and different arrangements of whom we need in treating elderly cancer patients with radiotherapy, due to the particular features of these patients

**SYMPOSIUM**  
**ONCOLOGY SAFETY: LEARNING FROM EXPERIENCE**  
**08:45 - 10:00 • Room 118-119**  
Chair: D. Pasini (Italy)  
Co-Chair: M. Arnalte Olloquequi (Spain)

08:45  >  Elderly with cancer: is it necessary to change the radiotherapy protocol?  
Speaker: H. Struikmans (The Netherlands)  
SP-0201

09:10  >  What elderly cancer patients want to know?  
Differences among elderly and young patients  
Speaker: F. Cellini (Italy)  
SP-0202

09:35  >  Guidelines to treat patients with orthopaedic prostheses  
Speaker: N. Van Wieringen (The Netherlands)  
SP-0203

**SYMPOSIUM**  
**onColoGy sAFETY: lEArninG FroM ExpEriEnCE**  
**08:45 - 10:00 • Room 122-123**  
Chair: M. Coffey (Ireland Republic of)  
Co-Chair: J Craven-Bartle (Spain)

08:45  >  Physics perspective on incidents  
Speaker: T. Knöös (Sweden)  
SP-0204

09:00  >  Radiation oncologist’s perspective on incidents  
Speaker: J. Cosset (France)  
SP-0205

09:15  >  How to improve safety and quality of oncological surgery?  
Speaker: M. Dahan (France)  
SP-0206

09:30  >  Incidents in medical oncology: management and clinical impact  
Speaker: P. Aftimos (Belgium)  
SP-0207

09:45  >  Discussion

**POSTER DISCUSSION: 5**  
**MISCELLANEOUS**  
**09:00 - 09:45 • Poster Area**  
Chair: C. Aristei (Italy)  
Co-Chair: TBC

> Reirradiation with/without temozolomide results in a median survival of 11 months in patients with recurrent glioma  
PD-0208

> Pediatric intramedullary spinal cord astrocytoma management:  
A tertiary care center’s experience  
PD-0209

> Adjuvant radiotherapy improves local control and survival in patients with uterine leiomyosarcoma  
P. Han, P. Weng (Canada), J. Sykes, C. Catton, S. Laframboise, A. Fyles, L. Manchui, W. Levin, M. Milosevic  
PD-0210

> IMRT-SIB in brain oligometastases: phase i study (ISIDE BM1) final results  
M. Ferro (Italy), M. Massuccesi, F. Deodato, V. Picardi, S. Cilla, S. Mignogna, G. Macchio, C. Digesù, V. Valentini, A.G. Morganti  
PD-0211

> Survival after PET/CT planned concomitant boost (IMRT) to lymph node metastasis in patients with cervical cancer  
H. Hansen (Denmark), S. Engelholm, P. Munck af Rosenschold, S. Lassen, S.A. Engelholm  
PD-0212
Friday 11 May 2012

> Retro-EMBRACE: A multicentre retrospective study of Image Guided Adaptive Brachytherapy in cervical cancer
  A.E. Sturdza (Austria), L.U. Fokdal, J.C. Lindegaard, K. Tanderup, C. Kirisits, R. Pötter, G. RetroEMBRACE study group
  PD-0213

> Stem cells may not contribute to radioresistance of glioblastoma multiforme
  M. Kase (Estonia), M. Wardja, K. Niinepuu, S. Kase, A. Minajeva, T. Asser, J. Jaal
  PD-0214

> A clinical comparison between accelerated IMRT versus standard treatment on 446 breast cancer patients
  C. Di Gesù (Italy), G. Macchia, F. Deodato, S. Cilla, M. Massaccesi, M. Barriello, L. Di Lullo, F. Pacelli, V. Valentini, A.G. Morganti
  PD-0215

> Long term results of a randomized study of IORT versus external beam boost in early breast cancer patients
  A. Ciabattoni (Italy), S. Drago, G.B. Grassi, A. De Gregorio, F. Felicioni, A. Petrucci, R. Consorti, M.A. Mirri
  PD-0216

PROFFERED PAPERS

SELECTED RANDOMISED TRIALS
10:30 - 11:45 • Auditorium
Chair: J. Bourhis (France)
Co-Chair: D. Hollywood (Ireland Republic of)

10:30 > Impact of ARCON on outcome in patients with laryngeal cancer and pre-irradiation anemia: a phase III trial analysis
  OC-0217

10:45 > Acute toxicity of the randomized phase III Dutch Hypofractionation Trial (HYPRO)for prostate cancer
  OC-0218

Friday 11 May 2012

11:00 > The MRC CR07 trial NCIC CO16 trial after a median follow up of 8 years
  D. Sebag-Montefiore (United Kingdom), R. Steele, J. Monson, J. Couture, C. de Metz, C. Pugh, L. Nichols, L.C. Thompson, P. Quirke
  OC-0219

11:15 > Chemoradiotherapy vs Bioradiotherapy for Larynx Preservation: a GORTEC Randomized Trial (TREMPLIN)
  Y. Pointreau (France), F. Rolland, M. Alfonsi, A. Baudoux, C. Sire, D. de Raucourt, O. Malard, C. Tuchais, E. Blot, J.L. Lefebvre
  OC-0220

PROFFERED PAPERS
PHYSICS 6: DOSIMETRY CHALLENGES AND NEW DETECTORS
10:30 - 11:30 • Room 117
Chair: S. Beddar (USA)
Co-Chair: A. Lopez Medina (Spain)

10:30 > Development and application of a novel multi-point plastic scintillation detector for radiation therapy.
  F. Therriault-Proulx (USA), L. Archambault, L. Beaulieu, S. Beddar
  OC-0221

10:40 > A 2D beam-quality specifier for flattening filter free beams
  M. Dalaryd (Sweden), C. Ceberg, T. Knöös
  OC-0222

10:50 > Gel dosimetry for the clinic: a new system utilizing CT read-out
  M. Hilts (Canada), H. Johnston, J. Carrick, A. Jirasek
  OC-0223

11:00 > High resolution 2D dosimetry using long scintillating fibers and tomographic reconstruction
  M. Goulet (Canada), L. Archambault, L. Beaulieu, L. Gingras
  OC-0224

11:10 > Low energy photon dosimetry using plastic scintillation detectors
  F. Lessard (Canada), F. Therriault-Proulx, P. Després, L. Archambault, S. Beddar, L. Beaulieu
  OC-0225
**Friday 11 May 2012**

### PROFFERED PAPERS
**PHYSICS 7: IMPLICATIONS OF IMAGE QUALITY ON TREATMENT PLANNING AND FOLLOW-UP**
**10:30 - 11:30 • Room 116**
**Chair:** M. Stock (Austria)
**Co-Chair:** M. Ribas Morales (Spain)

**10:30**
Approaching pulse-resolved, non-perturbing dose verification of dynamic radiotherapy
A.R. Beierholm (Denmark), S.M.S. Damkjær, C.F. Behrens, C.E. Andersen

10:40
The impact of CT artifacts from metallic hip prostheses on the calculated dose in prostate cancer radiotherapy
L. Matulewicz (Poland), K. Slosarek

**10:50**
Effect of dental filling on head and neck RapidArc treatment: clinical challenges and solution
N. Mail (Saudi Arabia), Y. AlBarakati, M.A. Khan, F. Saeedi, N. Safadi, S. Al-Ghamdi, A. Shabra, A. Saoudi

11:00
CBCT image quality improved by scatter subtraction calculated by Monte Carlo simulations
R. Thing (Denmark), E. Mainegra-Hing, G. Wells, I. Kawrakow, C. Brink

11:10
Megavoltage x-ray scatter correction for simultaneous cone-beam CT imaging during VMAT delivery

**Friday 11 May 2012**

### PROFFERED PAPERS
**RTT 2: POSITION VERIFICATION**
**10:30 - 11:30 • Room 118-119**
**Chair:** R. Harris (United Kingdom)

**10:30**
Radiation technologist led image guided radiotherapy - is it safe and achievable for lung SBRT?
A. Needham (United Kingdom), H. Summers, D.J.R. Sykes, J. Lilley, D.A.M Henry, D.K.N Franks

**10:40**
IGRT data to evaluate set up accuracy of the immobilization systems
L. Balardi (Italy), G. Mantello, S. Costantini, F. Fenu, L. Vicenzi, F. Cucciarelli, M. Montisci, R. Righetto, M. Valentini, M. Cardinali

**10:50**
Inter and intrafraction variations of breathing motion and comparison between 3D and 4D setup corrections using CBCT
E. van den Boomen (The Netherlands), M. Bierings, D. Schuring

**11:00**
Set-up accuracy and intra-fractional motion in VMAT prostate treatments
A. Tini (Switzerland), A. Leang, S. Lang, M. Kovacs, C. Winter, C. Oehler, D. Zwahlen

**11:10**
Position variability of the larynx during radiotherapy of stage 1/2 laryngeal cancer
M. Buijs (The Netherlands), P. Remeijer, S. Ali

**11:20**
Evaluation the effectiveness of immobilization systems by daily megavoltage computed tomography in Tomotherapy
K. Cheng (Hong Kong (SAR) China), V. Wu
Friday 11 May 2012

POSTER DISCUSSION: 6
NEW TECHNOLOGIES AND TECHNIQUES
10:30 - 11:15 • Poster Area
CHAIR: TBC
CO-CHAIR: C. Garibaldi (Italy)

> Pre-clinical implementation of a small animal image-guided irradiator
A. Gasparini (The Netherlands), M.C. de Goolijer, H. te Poele, F. Stewart, O. van Tellingen, J.J. Sonke PD-0239

> Concept and Monte Carlo evaluation of a novel 2d binary collimator for fast rotational IMRT
G. Altenstein (Germany), S. Mill, J. Heller, O. Heid, U. Oelfke PD-0240

> Beam characteristics for MR-linac; measurements and Monte Carlo simulations
K. Smit (The Netherlands), S. Hissoiny, J.J. Lagendijk, B.W. Raaymakers PD-0241

> Boosting rectal cancer using the MRI accelerator: impact of transverse 1.5 T magnetic field on IMRT
J.J.E. Kleijnen (The Netherlands), B. van Asselen, M. Intven, G.H. Bol, M. van Vulpen, J.J.W. Lagendijk, O. Reerink, B.W. Raaymakers PD-0242

> Treatment plan quality of IMRT and VMAT with and without flattening filter - Comparison using Pareto optimal fronts
W. Lechner (Austria), G. Kragl, D. Georg PD-0243

> Challenges in developing radiotherapy planning protocol for future UK stereotactic liver radiotherapy trials
I. Blasiak-Wal (United Kingdom), H.A. McNair, V.N. Hansen, M.A. Hawkins PD-0244

> Patient QA for single high dose rotational treatments
Friday 11 May 2012

JOINT SYMPOSIUM
ESTRO-CARO: BONE METASTASIS TREATMENT IN ELDERLY PATIENTS

LEARNING OBJECTIVES:
1. To investigate the benefits and toxicities in the radiation treatment of bone metastases in elderly patients
2. To learn about cost effectiveness in radiotherapy trials on bone metastases
3. To discuss the role of RT for the management of bone metastases compared to Radiopharmaceuticals and Bisphosphonates in the elderly

14:30 - 15:45 • Room 113-114
Chair: D. Hollywood (Ireland, Republic of)
Co-Chair: A. Bezjak (Canada)

14:30 > The added challenges of bone metastasis treatment in elderly patients
Speaker: E. Chow (Canada)  SP-0254

14:55 > Cost effectiveness in bone metastases treatment
Speaker: Y. van der Linden (The Netherlands) SP-0255

15:20 > Bone metastases: radiotherapy (RT), bone seeking radiopharmaceuticals (BSRs) and Bisphosphonates (Bps)
Speaker: V. Vassiliou (Cyprus) SP-0256

SYMPOSIUM
EMERGING IMAGING TECHNOLOGIES: HOW FUNCTIONAL IMAGING WILL IMPACT ON OUR PRACTICE

LEARNING OBJECTIVES:
1. To understand the value of functional imaging for the oncologic management (at large) of lung, lymphoma, prostate and brain tumors
2. To understand the value of functional imaging for radiation treatment planning of lung, lymphoma, prostate and brain tumors

14:30 - 15:45 • Room 113
Chair: V. Grégoire (Belgium)
Co-Chair: D. Thorwarth (Germany)

14:30 > Functional imaging for prostate radiotherapy
Speaker: V. Khoo (United Kingdom) SP-0257

14:48 > Emerging imaging technologies? How functional imaging will impact on our practice. Brain tumors
Speaker: A. Grosu (Germany) SP-0258

15:06 > Functional imaging and radiation treatments in lymphomas:
Speaker: T. Girinsky (France) SP-0259

15:24 > Emerging imaging technologies: how functional imaging will impact on our practice - lung
Speaker: U. Nestle (Germany) SP-0260

SYMPOSIUM
IMAGING FOR TREATMENT ASSESSMENT

LEARNING OBJECTIVES:
1. To become familiar with the positivity to make early treatment assessment based on imaging
2. To understand the need for early assessment of treatment outcome
3. To discuss the role of RT for the management of bone metastases compared to Radiopharmaceuticals and Bisphosphonates in the elderly

14:30 - 15:45 • Room 111
Chair: V. Grégoire (Belgium)
Co-Chair: D. Thorwarth (Germany)

14:30 > Functional imaging for prostate radiotherapy
Speaker: V. Khoo (United Kingdom) SP-0257

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Speaker: A. Grosu (Germany) SP-0258

15:06 > Functional imaging and radiation treatments in lymphomas:
Speaker: T. Girinsky (France) SP-0259

15:24 > Emerging imaging technologies: how functional imaging will impact on our practice - lung
Speaker: U. Nestle (Germany) SP-0260
Friday 11 May 2012

15:20  >  Assessment of head-neck toxicity using CT  
Speaker: G. Sanguineti (USA)  
SP-0263

■ LOOK INSIDE

TRACKING: TECHNIQUES, METHODS, DOSIMETRIC AND QA ASPECTS

Learning Objectives:
1. Indication of use for real-time tumour tracking (clinical benefit) for which patient groups
2. Feasibility of identifying the patients that benefit and real-time tracking of the tumour
3. To clarify the required safety procedures to use the technique clinically

14:30 - 15:45 • Room 120-121
Chair: P.C. Lara Jimenez (Spain)  
Co-Chair: J. Lopez Torrecilla (Spain)

14:30  >  The yin and yang of extracellular matrix and radiation  
Speaker: N. Cordes (Germany)  
SP-0267

14:55  >  Vascular and metabolic responses to tumor irradiation  
Speaker: M. Pruschy (Switzerland)  
SP-0268

15:20  >  Therapeutic benefit from transforming growth factor β inhibition during radiotherapy  
Speaker: M.H. Barcellos-Hoff (USA)  
SP-0269

SYMPOSIUM

DEVELOPING A ROADMAP TO A CONTRACT WITH THE YOUNG MEMBERS OF ESTRO

14:30 - 15:30 • Room 122-123
Chair: V. Valentini (Italy)
Co-Chair: C. Clark (United Kingdom)
Co-Chair: S. Rivera (France)

14:30  >  Objectives of the young task force  
Speaker: D. Zips (Germany)  
SP-0270

14:40  >  Results of a survey of young professionals in radiation oncology  
Speaker: B. De Bari (Italy)

14:55  >  Overview of the roadmap to the contract with the young  
Speaker: L.P. Muren (Denmark)

15:05  >  Experiences of the French young society in radiation oncology (SfjRO) in setting up a contract with ESTRO  
Speaker: P. Blanchard (France)

15:15  >  Discussion panel

Friday 11 May 2012

14:30 - 15:45 • Room 116
Chair: P. Munck af Rosenschäd (Denmark)
Co-Chair: L. Escudé (Spain)

14:30  >  Motivation for real-time adaptive therapy  
(challenges, potential use, level of evidence)  
Speaker: D. Verellen (Belgium)  
SP-0264

14:55  >  Real-time motion detection systems and the impact of intra-treatment motion on the treatment  
Speaker: P.R. Poulsen (Denmark)  
SP-0265

15:20  >  Seven years of clinical experience in real-time lung tumor tracking  
Speaker: M. Hoogeman (The Netherlands)  
SP-0266

SYMPOSIUM

DOES FRACTIONATED RADIATION THERAPY MAKE TUMOURS MORE AGGRESSIVE?

Learning Objectives:
1. To become familiar with the role of extracellular matrix in radiation response.
2. To understand fundamental aspects controlling TGFβ biology, its implications in radiation responses and to become familiar with TGFβ inhibitors in the clinic.
Friday 11 May 2012

Poster Discussion: Clinical Interdisciplinary Physics Radiobiology RTT Young

14:45 - 15:30 • Poster Area
Chair: M. Leech (Ireland Republic of)
Co-Chair: J. Kuipers (The Netherlands)

- Comparison of three immobilisation systems for radiation therapy in head and neck cancer
  R.L. Christiansen (Denmark), C.R. Hansen, T.B. Nielsen, J. Johansen, C. Brink
  PD-0270

- Local setup reproducibility of the head & neck cancer patients for two different neck supports in clinical practice
  S. van Beek (The Netherlands), A. Mencarelli, P. Remeijer, J.J. Sanke, C. Rasch
  PD-0271

- A randomised study comparing 3 immobilisation headrests for patients having radiotherapy for head & neck cancer
  K. Woods (United Kingdom), D. Husband, A. Shenoy, C. Corcoran, D. Blair, C. Baker
  PD-0272

- Dosimetric consequences due to tumour shrinkage and weight loss for IMRT and RA treatment planning
  D. Elezaj (Denmark), Z.P. Pohl, C.F. Behrens, D. Sjäström
  PD-0273

- Comparison of 2D kV images and 3D cone beam CT (CBCT) for positioning head & neck cancer (HNCa) radiotherapy patients
  R. Perry (United Kingdom), R.A. Parker, D. Emmens, S. Isherwood, H.V. James, C.D. Scrase
  PD-0274

- Effect of different headrests and 2D or 3D position verification on the setup margins of head & neck cancer patients
  J. Free (The Netherlands), N.M. Sijtsma, P.W.H. Wittendorp, A. van der Schaar, J.A. Langendijk, A.A. van ’t Veld
  PD-0275

- Patient positioning in stereotactic radiotherapy of brain metastasis using an extra-supported fixation mask
  S. Ali (The Netherlands), M. Buijs, N. Mesbahe - Bouzeya, P. Remeijer, L. Dewit
  PD-0276

- Steady diet as prophylaxis of acute diarrhea in preoperative pelvic radiotherapy of rectal adenocarcinoma
  E. Arregui López (Spain), C. Bueno Serrano, G. Quintana Navarro, M. Rodríguez Liñán, A. Béjar Luque, E. Rivín del Campo, A. Otero Romero, S. García Cabezas, A. Palacios Eito
  PD-0277

- Injection of hyaluronic acid (HA) preserves the rectal wall in prostate stereotactic body radiation therapy (SBRT)
  C. Udrescu (France), A. Ruffion, M.P. Sotton, M. Colombel, P. Jalade, O. Chapet
  PD-0278

- Value of 18F-FDG-PET/CT after stereotactic body radiation therapy for stage I non-small cell lung cancer
  N. Andratschke (Germany), J. Wantke, B. Mayer, R.A. Bundschuh, B. Haller, S.T. Astner, M. Molls, M. Essler
  PD-0279

- Stereotactic body irradiation in patients with solitary lung nodules
  PD-0280

- Vestibular schwannoma treated with fractionated stereotactic radiotherapy. Our experience
  N. Gascón (Spain), J.F. Pérez-Regadera, R. Dambrosi, A. Castaño, R. Martínez, Cabeza MA.(1), Bartolomé A.(1), E. Lanzós
  PD-0281

- Robotic stereotactic body radiation therapy for liver metastases
  K. Engin (Turkey), N. Kucuk
  PD-0282

Friday 11 May 2012

Poster Discussion: Young Scientists 1: Stereotactic and Palliation
15:45 - 17:15 • Poster Area 1
Chair: J. Jaal (Estonia)
Co-Chair: Y. Pointreau (France)
Friday 11 May 2012

POSTER DISCUSSION

**YOUNG SCIENTISTS 2: BREAST AND IMAGING/VOLUME DEFINITION IN BREAST**
15:45 - 17:15 • Poster Area 2
Chair: B. Offersen (Denmark)
Co-Chair: R. Ciervide (USA)

- A comparison of CT and US imaging for brachytherapy partial breast irradiation treatment planning
  
  M.G.A. Sattler (Canada), B. Keller, E. Rakovitch, J.P. Pignon  
  PD-0283

- Reduction of probability of cardiac and pulmonary complications for early stage breast cancer patients
  
  O. Utehina (Latvia), A. Meijers, G. Boka, D. Purina, S. Popovs  
  PD-0284

- Evaluation of tolerance to exclusive IORT with different doses for conservative breast cancer treatment
  
  A. Fozza (Italy), L. Belgiola, G. Timon, F. Cavagnetto, M. Gustinu, G. Canavese, P. Meszaros, G. Vidano, R. Corvà, M. Guenzi  
  PD-0285

- A simplified CT-based definition of the supraclavicular and infraclavicular nodal volumes in breast cancer
  
  I. Atean (France), Y. Pointreau, L. Ouldamer, C. Monghal, G. Bera, A. Bourgoux, I. Barillot  
  PD-0286

- Advances in MR imaging of axillary lymph nodes for elective radiation treatment of breast cancer
  
  B. van Asselen (The Netherlands), H.J.G.D. van den Bongard, J.J.W. Lagendijk, M. van Vulpen, M.E.P. Philippens  
  PD-0287

- Correlation of lymphoscintigraphy w/ ILM in II1 studies w/ Tc99m-tilmanocept in breast cancer & melanoma
  
  W. Metz (USA), B. Abbruzzese, S. Blackburn, B. Potter, J. Shuping, F. Cope, D. King, L. Christman  
  PD-0288

Friday 11 May 2012

POSTER DISCUSSION

**YOUNG SCIENTISTS 3: LUNG**
15:45 - 17:15 • Poster Area 3
Chair: TBC
Co-Chair: A. Navarro-Martin (Spain)

- Regions of the tumor with different FDG uptake exhibit also a difference in advanced CT imaging information in NSCLC
  
  R. Leijenaar (The Netherlands), S. Carvalho, E. Rios Velazquez, H. Aerts, P. Lambin  
  PD-0289

- Correlation between dose volume parameters and toxicity in patients treated with SABR for stage 1 lung cancer
  
  H.B. Musunuru (United Kingdom), J. Lilley, M. Naisbit, S.M. Ramasamy, S. Kirwin, M.P. Sne, K. Clarke, R.N. Turner, R. Stuart, K.N. Franks  
  PD-0290

- Clinical outcome after cone-beam computed tomography-guided hypofractionated radiotherapy for stage I-II NSCLC
  
  K. Vandecasteele (Belgium), P. Berkovic, I. Madani, K. Vermaelen, J.P. van Meerbeeck, V. Surmont, W. De Neve  
  PD-0291

- Is there a role for PCI in NSCLC: a retrospective study of brain metastasis after radical radiotherapy
  
  E. Khan, S. Ismail, R. Muirhead (United Kingdom)  
  PD-0292

- Reproducibility and volume segmentation methods on F-miso and FLT PET-CT images in patients with lung cancer
  
  S. Thureau (France), P. Chaumet-Riffaud, P. Fernandez, B. Bridji, L. Houzard, L. Tessonnier, F. Cachin, R. Modzelewski, R. Vera, B. Dubray  
  PD-0293

- Palliative radiotherapy treatment of inoperable pleural mesothelioma using helical tomotherapy
  
  E. Parisi (Italy), A. Romeo, A. Sarnelli, G. Genestreti, G. Ghigi, M. Giannini, E. Nerl, S.R. Bettia, S. Vennarini, R. Polico  
  PD-0294
Friday 11 May 2012

POSTER DISCUSSION
YOUNG SCIENTISTS 4: HEAD AND NECK
15:45 - 17:15 • Poster Area 4
Chair: J. Cacicedo (Spain)
Co-Chair: L. Livi (Italy)

> Late toxicities in 796 patients after conventional radiation therapy alone for nasopharyngeal carcinoma
  J. Tuan (Singapore), T. Ha, W. Ong, T. Slow, I. Tham, S. Yap, T. Tan, E. Chua, K. Fong, J. Wee
  PD-0295

> Efficacy of concurrent carboplatin with IMRT after induction chemotherapy for locoregional advanced HNSCC
  K. Geropontas (United Kingdom), S. Loo, Z. Tasigiannopoulou, R. Fitchett, C. Martin, T. Roques
  PD-0296

> Aspiration pneumonia among 324 consecutive head and neck cancer patients treated with radiotherapy
  H. Mortensen (Denmark), K. Jensen, C. Grau
  PD-0297

> Is a HPV-based model more accurate than the traditional TNM in oropharyngeal carcinoma patients to predict outcome?
  PD-0298

> Correlations of spatial dose distribution with trismus in a cohort of head and neck radiotherapy patients
  Z. Saleh (USA), S. Rao, A. Apte, G. Sharp, N. Lee, J. Deasy
  PD-0299

> Validation of diffusion weighted magnetic resonance imaging for automatic tumor delineation in laryngeal cancer
  PD-0300

Friday 11 May 2012

POSTER DISCUSSION
YOUNG SCIENTISTS 5: GYNAECOLOGY
15:45 - 17:15 • Poster Area 5
Chair: I. Barillot (France)

> Bladder-rectum spacer balloon in HDR brachytherapy in carcinoma cervix
  B. Rai (India), F.D. Patel, S.C. Sharma, R. Kapoor, A.S. Aprem
  PD-0301

> Improved risk assessment of endometrial cancer patients by analysis of MSI, PI3K-AKT, Wnt and P53 pathways
  PD-0302

> Dose escalation in loco-regionally advanced cervical cancer using intensity modulated radiotherapy
  N. Cihoric (Switzerland), D. Aebersold, K. Krüger, K. Lössl
  PD-0303

> Prophylactic para-aortic lymph node irradiation in cervix cancer patients receiving concurrent chemoradiation
  M.L. Yap (Canada), J. Cuartero, J. Yan, M. Pintilie, A. Fyles, K. Opfermann, W. Levin, M. Manchul, M. Milosevic
  PD-0304

> Impact of clinically positive lymph nodes on FIGO IB1-IIB cervical cancer patients
  R. D’Ambrosi (Spain), J. Pérez-Regadera, S. Guardado, O. Hernández, G. Vazquez, D. Lora, J. De La Cruz, V. Rodríguez, M. Murillo, E. Lanzós
  PD-0305

> MR-guided brachytherapy process for cervical cancer: identifying procedure time & opportunities for efficiencies
  K. Chan (Canada), T. Rosewall, B. Kenefick, M. Milosevic
  PD-0306
POSTER DISCUSSION
YOUNG SCIENTISTS 6: GI AND GU
15:45 - 17:15 • Poster Area 6
CHAIR: A. Bossi (France)
CO-CHAIR: A.R. Filippi (Italy)

- Assessing dose-to-medium to dose-to-water conversion for the Monte Carlo verification of 6 MV head and neck IMRT
  M. Zarza Moreno (Portugal), C. Borges, N. Teixeira, A.P. Jesus, G. Mora
  PD-0307

- Extension of the Monte Carlo code PENELOPE to protons
  J. Sorriaux (Belgium), F. Salvat, S. Vynckier, E. Sterpin
  PD-0314

- An analytical model for the attenuation produced by a carbon fiber treatment couch
  S. Ruiz Arrebola (Spain), F. Simancas, A. Tornero López, D. Burgos, R. Guerrero, M. Vilches
  PD-0315

- Characterisation of a high-resolution 1-D optical scanner for gel dosimeter samples
  T.S. Kinnari (Denmark), P.S. Skyt, E.S. Yates, L.P. Muren, J.B.B. Petersen, P. Balling
  PD-0316

- The thermal and temporal dependence of Presage™ dose response
  P.S. Skyt (Denmark), I. Wahlstedt, L.P. Muren, J.B.B. Petersen, P. Balling
  PD-0317

- In-phantom dose verification of four-field box and IMRT treatment delivery using plastic scintillation detectors
  D.M. Klein (USA), L.S. Wootton, R.J. Kudchadker, A.K. Lee, A.S. Beddar
  PD-0318
Friday 11 May 2012

POSTER DISCUSSION
YOUNG SCIENTISTS 8: DOSE MEASUREMENT
15:45 - 17:15 • Poster Area 8
CHAIR: T. Gevaert (Belgium)
CO-CHAIR: W. van Elmpt (The Netherlands)

> Underestimation of dose delivery due to scattering conditions for pre-clinical irradiations
  C. Noblet (France), S. Chiavassa, F. Paris, S. Supiot, A. Lisbona, G. Delpan
  PD-0319

> Determination of spatially dependent correction factors for Si-diode measurements in photon fields
  M. Parczyk (Germany), J. Wilbert, H. Weigelt, O.A. Sauer
  PD-0320

> Comparison of current IMRT QA and a novel anatomy based analysis method by detecting introduced errors
  Ø. Gasic (Sweden), J. Sjöberg, H. Benedek, M. Enmark, T. Knöds
  PD-0321

> Evaluation of a commercial EPID dosimetry system for pre-treatment QA, transit dosimetry and adaptive radiotherapy
  A. Reilly (United Kingdom), L. Fennell
  PD-0322

> Tomotherapy treatment plan quality assurance (QA): the impact of applied criteria on gamma passing rate (KGP)
  A. Di Dia (Italy), C. Sini, S. Bresciani, A. Maggio, A. Mirinati, C. Cutai, E. Garibaldi, P. Gabriele, M. Stasi
  PD-0323

> Tomotherapy in-vivo dosimetry using on-line MVCT detector: Institution clinical experience
  C. Lesven (France), S. Caneva Losa, A. Mazal, P. Francois
  PD-0324

Friday 11 May 2012

POSTER DISCUSSION
YOUNG SCIENTISTS 9: IMAGING FOR CLINICAL APPLICATIONS AND QA
15:45 - 17:15 • Poster Area 9
CHAIR: L. Court (USA)
CO-CHAIR: TBC

> A new method for sub-millimeter co-calibration of X-ray positioning system and linac isocenters
  D. Arp (Denmark), J. Carl
  PD-0325

> Commissioning of a new wide bore MRI scanner for radiotherapy planning of head & neck cancer
  PD-0326

> Statistical analysis of MRI-only based dose planning
  M.E. Korsholm (Denmark), L.W. Waring, R.R. Paulsen, J.M. Edmund
  PD-0327

> Does partial volume effect in PET affect biologically adapted planning based on FDG uptake?
  G. Shakirin (Germany), S. Carvalho, M. Ahrens, A. Fischer, R. Boellaard, P. Lambin
  PD-0328

> Evaluation of various deformable image registration algorithms using thoracic images
  PD-0329

> Biomechanical deformable registration based dose accumulation vs. dose summation for the bladder
  E.S. Andersen (Denmark), L.P. Muren, T.S. Sørensen, K. Noe, M. Thor, J.B. Petersen, M. Hayer, L. Bentzen, K. Tanderup
  PD-0330
Friday 11 May 2012

POSTER DISCUSSION
YOUNG SCIENTISTS 10: IMPLEMENTATION OF NEW TECHNOLOGIES
15:45 - 17:15 • Poster Area 10
CHAIR: W. Wunderink (The Netherlands)
CO-CHAIR: L.B. Hysing (Norway)

- Efficient IMRT quality control using Varian dynamic log-file (DynaLog) analysis in a busy radiotherapy department
  C.E. Agnew (United Kingdom), A.R. Hounsell, C.K. McGarry

- Assessment of dosimetric improvements to VMAT delivery on moving to continuously variable dose rates
  A. McWilliam (United Kingdom), E. Johnstone, C.J. Boylan, C.G. Rowbottom

- Setup efficiency and accuracy using AlignRT v.4.5 and v.5 3D real-time surface imaging system
  J. Peng (USA), K. Vanek, N. Koch, M. Ashenafi, D. McDonald, J. Jenrette

- Development, quality assurance & in vivo use of an MRI-guided robot for high precision brachytherapy
  M.R. van den Bosch (The Netherlands), M. van Vulpen, J.J.W. Lagendijk, M.A. Moerland

- A novel compact rotating linac for proton therapy - a design and dose delivery study
  K. Kraus, A. Degiovanni (Switzerland), U. Arnoldi, U. Oelfke

- Results of the IAEA project on TPS audit in radiotherapy in Europe
  E. Gershekevitch (Estonia), C. Peshnyak, B. Petrovic, J. Grezdo, K. Chelminski, M. do Carmo Lopes, J. Izewska

Friday 11 May 2012

POSTER DISCUSSION
YOUNG SCIENTISTS 11: MANAGEMENT OF INTER AND INTRA FRACTION MOTION
15:45 - 17:15 • Poster Area 11
CHAIR: TBC
CO-CHAIR: T. Depuydt (Belgium)

- Prostate IGRT using quantitative 3D ultrasound imaging: intramodality US vs. MV imaging of implanted markers
  S. van der Meer (The Netherlands), E. Bloemen-van Gurp, D. Fontanarosa, R. Visser, L. Lutgens, F. van Gils, F. Verhaegen

- Evaluation of a prerelease dose accumulation software based on deformable image registration applied to the bladder
  M. Thor (Denmark), J.B.B. Petersen, U.V. Elstrøm, E.S. Andersen, K. Tanderup, T.S. Sørensen, K.O. Noe, L. Bentzen, M. Hayer, L.P. Muren

- Optimum adaptive radiation therapy strategy for nasopharyngeal carcinoma
  W.W.K. Fung (Hong Kong (SAR) China), V.W.C. Wu

- Evaluation of stability of implanted markers for image guided radiotherapy beam tracking of mobile lung tumours

- Impact of lung tumour tracking model on safety margins using magnetic multi-sensors and audio-video coaching
  S. Goossens (Belgium), F. Seny, J. Lee, G. Janssens, X. Geets

- Time-resolved evolvement of target dose distribution during IMAT with and without dynamic MLC tracking
  T. Ravkilde (Denmark), P.J. Keall, C. Grau, M. Hayer, P.R. Poulsen
Friday 11 May 2012

POSTER DISCUSSION
YOUNG SCIENTISTS 12: TREATMENT PLANNING: OPTIMISATION AND COMPARISON
15:45 - 17:15 • Poster Area 12
CHAIR: G. Nicolini (Switzerland)
CO-CHAIR: TBC

> IMRT optimization using multivariable NTCP models for head and neck cancer patients
  R.G.J. Kierkels (The Netherlands), A. van der Schaaf, C. Schilstra, M. Bal, J.A. Langendijk, A.A. van ‘t Veld
  PD-0343

> HybridArc™ - efficient mixture of dynamic arc and static IMRT? Comparison to VMAT in terms of plan quality & efficiency
  M. Stock (Austria), R. Dreindl, D. Georg
  PD-0344

> Pitch choice for off-axis blocked targets treated with tomotherapy
  D. O’Doherty (United Kingdom), M. Lenane, A. Geater, S. Tudor
  PD-0345

> A novel software tool to guide dosimetrists to efficiently generate high quality prostate IMRT treatment plans
  Y. Wang, L. Incrocci, A. Zolnay, H. Joosten, S. Breedveld, T. McNutt, B. Heijmen, S. Petit (The Netherlands)
  PD-0346

> Extended Penumbra Reduction for normal tissue sparing in proton therapy of intracranial tumors
  M. Bubula (Germany), U. Jelen, F. Ammazzalorso, U. Weber, K. Zink, R. Engenhart-Cabillic, A. Wittig
  PD-0347

> Proton and carbon ion IMPT treatment plans in raster scanning ion beam therapy
  M. Ellerbrock (Germany), B. Ackermann, N. Chaudhri, S. Ecker, K. Henkner, H. Prokesch, M. Winter, O. Jaekel
  PD-0348

Friday 11 May 2012

POSTER DISCUSSION
YOUNG SCIENTISTS 13: RTT
15:45 - 17:15 • Poster Area 13
CHAIR: M. Mast (The Netherlands)
CO-CHAIR: D. Pasini (Italy)

> Evaluation of intra-fractional motion in frameless stereotactic irradiation
  T. Takakura (Japan), T. Mizowaki, M. Nakamura, M. Nakata, Y. Tsuruta, Y. Miyabe, K. Higasimura, M. Hiraoaka
  PD-0349

> Radical radiotherapy for muscle-invasive bladder cancer audit abstract
  C.F.K. Lorimer (United Kingdom), J. Adam, J. Lim, A. Robinson, D. Gilbert, D. Crook, A. Nikapota
  PD-0350

> Implementation and integration of a 3D virtual radiotherapy environment system within a clinical setting
  A. Leong (Switzerland), A. Imboden, M. Pavic, C. Winter
  PD-0351

> Evaluation of set-up margins in mid-lower oesophageal cancers treated at a single centre with radical radiotherapy
  Q. Mehmood (United Kingdom), J. Stratford, A. Jackson, H. Sheikh
  PD-0352

> Six degrees of freedom robotic correction table: integration into routine radiotherapy practice
  M. Kovacs (Switzerland), M. Iseli, S. Lang, M. Malla, C. Winter
  PD-0353

> An evaluation of offline correction protocol in the treatment of prostate cancer
  M. Kamphuis (The Netherlands), N. van Wieringen, A. Bel, J. Wiersma, C. Maarten, C. Hulshof
  PD-0354

> Can offline corrections effectively substitute for daily online imaging in radiotherapy of carcinoma of Prostate?
  D. Prasad, P. Das, N. Saha, M. Nandi, S. Guha, S. Chatterjee, R. Achari, J. Mallick (India)
  PD-0355
Friday 11 May 2012

> Develop and implementing a cancer type specific educational program for image matching

D. Sjöström (Denmark), S.K. Buhl, M. Baker, K. Andersen, N. Hvidt Dinesen, S. Lind, S. Valentin, C.F. Behrens, V. Brandhof

PD-0356

■ POSTER DISCUSSION

YOUNG SCIENTISTS 14: RADIOBIOLOGY
15:45 - 17:15 • Poster Area 14
Chair: M. Scharpfenecker (The Netherlands)
Co-Chair: R.J. Muschel (United Kingdom)

> Dependence of cell survival on the instantaneous dose rate of a linear accelerator

L. Praestegaard (Denmark), B.S. Sørensen, A. Vestergaard, J. Oregaard

PD-0357

> In vivo response of three experimental prostate tumor sublines to photons and carbon ions: preliminary results

C. Glowa (Germany), P. Peschke, M. Scholz, P. Huber, J.P. Debus, C.P. Karger

PD-0358

> Radiosensitizing effect of a RasGAP derived peptide on cell survival in human cancer cells in vitro and in vivo

D. Viertl (Switzerland), A. Annibaldi, C. Widmann, O. Matzinger

PD-0359

> γH2AX: a sensitive biomarker for comparison of whole body dose from IMRT, RapidArc™ or 3D-conformal radiotherapy


PD-0360

> Artificial neural networks for toxicity prediction after prostate RT: a ready to use graphical tool for clinicians

M. Carrara (Italy), S. Tomatis, T. Rancati, C. Fiorino, A. Mogli, G. Fellin, L. Menegotti, C. Bianchi, A. Monti, R. Valdagni

PD-0361

Friday 11 May 2012

> Monitoring tumor microvascular response to ionizing radiation with optical coherence tomography

L. Conroy (Canada), A. Maeda, R.S. DaCosta, I.A. Vitkin

PD-0362

■ SYMPOSIUM

ELDERLY PATIENTS TREATMENT: STANDARDS VS. FEASIBILITY (2)

Learning Objectives:
1. To understand the challenges in developing evidence based approaches for elderly patients
2. Do elderly patients require different treatment approaches?
3. An overview of radiotherapy treatment approaches in the elderly using three common tumour types as a model: Lung cancer, Head & Neck cancer and Rectal cancer

16:15 - 17:15 • Auditorium

Chair: D. Hollywood (Ireland Republic of)
Co-Chair: J. Bourhis (France)

16:15 > Primary RT: head & neck

Speaker: J. Bourhis (France)

SP-0363

16:35 > Neoadjuvant RT: lower GI (rectum and anus)

Speaker: D. Sebag-Montefiore (United Kingdom)

SP-0364

16:55 > Adjuvant and definitive radiotherapy in elderly patients with lung cancer

Speaker: L. Kepka (Poland)

SP-0365

■ PROOFFERED PAPERS

CLINICAL 5: AGE RELATED ISSUES
16:15 - 17:15 • Room 113-114

Chair: R. Kortmann (Germany)
Co-Chair: A.G. Morganti (Italy)

16:15 > The Italian oncological net for cancer palliative care

P. De Rose (Italy), G. Mantini, L. Tagliaferri, S. Manfrida, S. Barbi, M. Balducci, S. Chiesa, M.A. Gambacorta, V. Valentin, N. Cellini

OC-0366
Friday 11 May 2012

16:25  >  Radium-223 chloride and improved survival in castration-resistant prostate cancer patients with bone metastases  

V. Lewington (United Kingdom), S. Boehmer, L. Franzén, R. Klijer, B. Mellado, R. Coleman, A. Cross, C. Biggin, C. Parker  

OC-0367

16:35  >  Results of a phase I-II study of short course accelerated radiation therapy (SHARON) for multiple brain metastases.  

L. Caravatta (Italy), M. Ferro, G. Macchia, F. Deodato, M. Massaccesi, M. Buwenge, A. Scapati, V. Valentini, N. Cellini, A.G. Morganti  

OC-0368

16:45  >  Quality of life in early breast cancer: Results from Cambridge breast intensity-modulated radiotherapy trial  


OC-0369

16:55  >  The impact of young age on health related quality of life after breast conserving surgery and radiotherapy  


OC-0370

17:05  >  A hypofractionated radiotherapy (HyFRT) schedule for palliative treatment of head and neck cancer  

C. Maare (Denmark), E. Andersen, E. Samsøe, J. Bentzen  

OC-0371

SYMPOSIUM

CAN IMAGING BE QUANTITATIVE?

16:15 - 17:15 • Room 115

Chair: P. Lambin (The Netherlands)
Co-Chair: TBC

16:15  >  The importance of multi-centric standards in PET/CT imaging in radiation oncology  

Speaker: W. Oyen (The Netherlands)  

SP-0372

16:25  >  The importance of multi-centric standards in PET/CT imaging in radiation oncology  

Speaker: W. Oyen (The Netherlands)  

SP-0372

16:35  >  The importance of multi-centric standards in PET/CT imaging in radiation oncology  

Speaker: W. Oyen (The Netherlands)  

SP-0372

16:45  >  The importance of multi-centric standards in PET/CT imaging in radiation oncology  

Speaker: W. Oyen (The Netherlands)  

SP-0372

16:55  >  The importance of multi-centric standards in PET/CT imaging in radiation oncology  

Speaker: W. Oyen (The Netherlands)  

SP-0372

Friday 11 May 2012

16:35  >  Quantifying hypoxia imaging to improve radiotherapy outcome  

Speaker: M.R. Horsman (Denmark)  

SP-0373

16:55  >  What can automatic PET tumour volume delineation bring to treatment planning?  

Speaker: D. Visvikis (France)  

SP-0374

PROFFERED PAPERS

PHYSICS 8: MARGINS

16:15 - 17:15 • Room 117

Chair: A. Bel (The Netherlands)
Co-Chair: D. Jurado-Bruggeman (Spain)

16:15  >  A recipe for CTV margins and how to combine them with PTV margins  


OC-0375

16:25  >  Impact of 4DCT image quality on ITV margins for radiotherapy simulation: helical vs. volumetric 4DCT  

C. Coolens (Canada), B. Driscoll, J. Bracken, D.A. Jaffray  

OC-0376

16:35  >  Real-time esophageal tumour motion quantification on cine MRI using an adaptive correlation filter  


OC-0377

16:45  >  Helical tomotherapy dynamics are not an issue to treat lung tumors for patients coached to ensure regular breathing  


OC-0378

16:55  >  Opportunities for margin reduction for cervical cancer by application of a population based library of plans  

S. van Kranen (The Netherlands), R. de Jong, P. de Ruiter, M. Bloemers, M. van Herk, P. Remeijer, J.J. Sonke  

OC-0379

17:05  >  A hypofractionated radiotherapy (HyFRT) schedule for palliative treatment of head and neck cancer  

C. Maare (Denmark), E. Andersen, E. Samsøe, J. Bentzen  

OC-0371
Friday 11 May 2012

17:05 > Planned dose, expected dose and delivered dose: The benefit of probabilistic population based plan evaluation


DEBATE
WE SHOULD DO PRE-TREATMENT QA FOR IMRT EVEN THOUGH WE DIDN’T DO IT FOR CONFORMAL THERAPY

LEARNING OBJECTIVES:
1. Advanced technology requires advanced QA and verification. The question is how best to do this in resource-limited scenarios
2. Cost-balance arguments around pre-treatment QA (and towards 2D/3D IVBD)
3. Efficient methods, automated, integrated methods are necessary (professional community message to manufacturers)

16:15 - 17:15 • Room 118-119
CHAIR: F. Cellini (Italy)
CO-CHAIR: A. Gomez-Iturriaga (Spain)

16:15 > An investigation of the dosimetric implications of contouring variability in 3DCRT of the prostate

SPEAKER: T. Pawlicki (USA) SP-0381

17:05 > Planned dose, expected dose and delivered dose: The benefit of probabilistic population based plan evaluation


Friday 11 May 2012

16:25 > Hypoxia-inducible factor 1a and 2a in whole-mount prostate histology: independent of DCE-MRI


16:35 > Pancreatic stellate cells induce EMT concurrent with an increase in cancer stem-like cells and radioresistance

O. Al-Assar (United Kingdom), F. Demircioglu, S. Lunardi, T. Brunner
OC-0385

16:45 > Nitric oxide-producing hepatocytes radiosensitize hypoxic colorectal cancer cells through oxygen sparing

OC-0386

16:55 > Multiparametric MRI imaging in patients undergoing ultra-hypofractionated RT for localised prostate cancer

OC-0387

17:05 > HIF pathway inhibition resolves tumour hypoxia and improves local tumour control after irradiation

L. Helbig (Germany), H. Galleiske, L. Koi, K. Brüchner, A. Yaromina, M. Baumann, D. Zips
OC-0388

PROFFERED PAPERS
RADIOTHERAPY 3: TUMOUR MICROENVIRONMENT

16:15 - 17:15 • Room 120-121
CHAIR: J. Alsner (Denmark)
CO-CHAIR: M. Krause (Germany)

16:15 > Micro and messenger RNAs involved in hypoxia sensitivity in head and neck squamous cell carcinoma

P. Span (The Netherlands), M. Bussink, J. Bussink, J.H. Kaanders OC-0383

16:25 > Hypoxia-inducible factor 1a and 2a in whole-mount prostate histology: independent of DCE-MRI


16:35 > Pancreatic stellate cells induce EMT concurrent with an increase in cancer stem-like cells and radioresistance

O. Al-Assar (United Kingdom), F. Demircioglu, S. Lunardi, T. Brunner
OC-0385

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OC-0386

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L. Helbig (Germany), H. Galleiske, L. Koi, K. Brüchner, A. Yaromina, M. Baumann, D. Zips
OC-0388

PROFFERED PAPERS
RADIOBIOLOGY 3: TUMOUR MICROENVIRONMENT

16:15 - 17:15 • Room 120-121
CHAIR: J. Alsner (Denmark)
CO-CHAIR: M. Krause (Germany)

16:15 > Micro and messenger RNAs involved in hypoxia sensitivity in head and neck squamous cell carcinoma

P. Span (The Netherlands), M. Bussink, J. Bussink, J.H. Kaanders OC-0383
Friday 11 May 2012

16:25  >  Comparison of two atlas selection strategies for segmentation of head and neck CT scans
K. Leung (Hong Kong (SAR) China), C. Cheung, W. Lam, S. Yu, T. Chua  
OC-0390

16:35  >  Evaluation of CT atlas-based segmentation of whole body’s organs for large fields irradiation.
G. Lamanna, S. Vegge (Italy), L. Parodi, G. Taccini, R. Corvò  
OC-0391

16:45  >  Implementation of the new standardised naming conventions in radiation therapy
J. van der Leer (The Netherlands), F.F.M. van Aarle, M.A.J. van Liershouw, M.J. van der Sanger, C.W. Hurkmans  
OC-0392

16:55  >  Margin calculation for temporally asymmetric respiratory motion
G. Boulthol (France), R. R. Rit, M. Ayadi, D. Sarrut  
OC-0393

17:05  >  Tomotherapy of locally advanced cervix carcinoma: clinical validation of 3 mm CTV-PTV expansion
P. Nickers (France), F. Le Tinier, B. Castelain, N. Reynaert, F. Crop, T. Lacornerie, E. Lartigau  
OC-0394

POSTER DISCUSSION: 8
RADIOBIOLOGICAL MODELLING
16:15 - 17:00  Poster Area
Chair: A.E. Nahum (United Kingdom)
Co-Chair: C. Fiorino (Italy)

>  Efficiency of biological vs physical optimization for single-arc VMAT planning in prostate and head-and-neck cases
V. Pyshniak (Belarus), A. Zverava, I. Fotina, S. Slomaksinski, E. Sayats, D. Okuntsau  
PD-0395

>  Modelling the radiobiological effect of set-up error in 18F-FDG-PET-guided dose escalation for head and neck cancer
M. Teoh (United Kingdom), C.H. Clark, K. Wood, S. Whitaker, M. Hussein, A. Nisbet  
PD-0396

Friday 11 May 2012

>  Correlation between surrogates of bladder dosimetry and DVH of the bladder wall defined on MRI imaging
V. Carillo (Italy), C. Cozzarini, L. Perna, A. Chiettera, C. Bianconi, S.G. Brenna, S. Gianolini, T. Rancati, R. Vaidagni, C. Fiorino  
PD-0397

>  Density variation of parotid glands during IMRT: correlation with treatment parameters and parotid shrinkage
C. Fiorino (Italy), G. Rizzo, E. Scalco, M.L. Belli, I. Dell’Oca, A. Mejia Rodriguez, F. Ricchetti, G. Sanguineti, V. Valentini, R. Calandrino  
PD-0398

>  Robustness of data-driven variable selection in multivariable modelling of complications after radiotherapy
A. van der Schaaf (The Netherlands), C.J. Xu, A.A. van ’t Veld, J.A. Langendijk  
PD-0399

>  Impact of repair during a treatment fraction on tumour BED. Untapped opportunities for temporal optimisation?
K. Symons, M.A. Ebert (Australia), N. Suchowerska, D.R. McKenzie  
PD-0400

>  Modelling tumour vasculature and radiation response using a simulated annealing approach
E. Ghasraddasht (Canada), C. Kirkby, H. Morrison  
PD-0401

>  Saving days not grays: radiobiological modelling of gaps during synchronous chemoradiation in head and neck cancer
A. Hartley (United Kingdom), S. Meade, H. Benghiat, J. Glaholm, J. Cashmore, P. Sanghera, H. Mehanna  
PD-0402

>  On the increased RBE of proton clusters-dynamic medium response approach
E. Fourkal (USA), I. Veltchev  
PD-0403
Friday 11 May 2012

**PROFFERED PAPERS**

**COMPANY AWARD LECTURES**

**17:30 - 18:00 • Auditorium**

**Chair:** V. Valentini (Italy)

**Co-Chair:** N. Jornet (Spain)

17:30 > ***ESTRO-Accuray Award***

Stereotactic body radiation therapy for liver tumors
W. Wunderink (The Netherlands), A. Mendez Romero

17:40 > ***ESTRO-Varian Award***

Reporting of late rectal and urinary bladder side effects after MRI guided adaptive brachytherapy of cervix cancer,
P. Georg (Austria), G. Goldner, M. Schmid, A. Boni, A. Ghabouss, W. Dörr, C. Kirisits, R. Pötter

17:50 > ***ESTRO-Jack Fowler University of Wisconsin Award***

A Bayesian framework for marker-based patient positioning with a few projections in very short arcs
W. Hoegel (Germany), R. Loesche, B. Dobler, M. Kroiss, O. Koelbl, P. Zygmanski

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Saturday 12 May 2012

**TEACHING LECTURE**

**CURRENT PRACTICE AND MOVING POINTS: LUNG**

**08:00 - 08:40 • Auditorium**

**Chair:** U. Ricardi (Italy)

08:00 > Current practice and moving points: lung

**Speaker:** C. Falivre-Finn (United Kingdom)

**SP-0407**

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**TEACHING LECTURE**

**STANDARDS AND UNCERTAINTIES IN RADIOTHERAPY OF THE UPPER ABDOMEN: PREOPERATIVE CHEMORADIATION IN PanCREATIC CANCER**

**08:00 - 08:40 • Room 113-114**

**Chair:** T. Brunner (United Kingdom)

08:00 > Standards and uncertainties in radiotherapy of upper abdomen: preoperative chemoradiation in pancreatic cancer

**Speaker:** A.G. Morganti (Italy)

**SP-0408**

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**TEACHING LECTURE**

**TARGETED AGENTS: RATIONALE, PRECLINICAL EVALUATION AND UP-DATE ON CLINICAL TRIALS**

**08:00 - 08:40 • Room 115**

**Chair:** R. Maurizi Enrici (Italy)

08:00 > Targeted agents: rationale, preclinical evaluation and up-date on clinical trials

**Speaker:** D. Zips (Germany)

**SP-0409**

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**TEACHING LECTURE**

**SMALL PHOTON FIELD DOSIMETRY: CHALLENGES IN ABSOLUTE, REFERENCE AND RELATIVE DOSIMETRY**

**08:00 - 08:40 • Room 117**

**Chair:** TBC

08:00 > Small photon field dosimetry: challenges in absolute, reference and relative dosimetry

**Speaker:** M.M. Aspradakis (Switzerland)

**SP-0410**
Saturday 12 May 2012

■ TEACHING LECTURE
OVERVIEW OF DOSE VOLUME PARAMETERS USED IN CLINICAL PRACTICE AND RECOMMENDATIONS FOR THE PELVIS
08:00 - 08:40 • Room 116
CHAIR: TBC
08:00 > Overview of dose volume parameters used in clinical practice and recommendations for the pelvis
SPeaker: T. Rancati (Italy) SP-0411

■ TEACHING LECTURE
MOLECULAR PATHOLOGY OF NORMAL TISSUE EFFECTS
08:00 - 08:40 • Room 120-121
CHAIR: W. Dörr (Germany)
08:00 > Molecular pathology of normal tissue effects
SPeaker: M. Vozenin (France) SP-0412

■ TEACHING LECTURE
RADIobiological PRINCIPLES OF RadioThERAPY: AN OVERVIEW
08:00 - 08:40 • Room 118-119
CHAIR: M. Kamphuis (The Netherlands)
08:00 > Radiobiological principles of radiotherapy: an overview
SPeaker: C. Schütze (Germany) SP-0413

■ SYMPOSIUM
CRITICAL ASSESSMENT OF THE POTENTIAL OF RESEARCH STRATEGIES TO IMPROVE OUTCOME OF ADVANCED NSCLC
LEARNING OBJECTIVES:
1. To understand the limits of the current strategies for advanced non-small cell lung cancer but also the progress achieved over the last decades
2. The importance of the ‘quality’ of the radiation technique
3. The necessity to individualize the treatment
08:45 - 10:00 • Auditorium
CHAIR: P. Van Houtte (Belgium)
CO-CHAIR: M.G. Trovo (Italy) SP-0414

08:45 > Image-guidance
SPeaker: M. Brada (United Kingdom)

09:03 > Dose escalation and fractionation in NSCLC
SPeaker: M. Baumann (Germany)

09:21 > Combined modalities including chemoradiation and molecular targeting
SPeaker: R. Dziadziuszko (Poland)

09:39 > Particle therapy for lung cancers
SPeaker: Z. Liao (USA)

08:45 - 10:00 • Room 113-114
CHAIR: K. Haustermans (Belgium)
CO-CHAIR: A. Hervás (Spain)

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Saturday 12 May 2012

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**SYMPOSIUM**

**NOVEL DRUGS AND RT**

**Chair:** E. Moyal-Cohen-Jonathan (France)
**Co-Chair:** I. Rodriguez-Melcon (Spain)

08:45 - 10:00 • Room 115

- **09:03** > Dosimetric commissioning of Linacs in VMAT mode  
  *Speaker:* K. Rosser (United Kingdom)  
  *Abs. Number:* SP-0426
- **09:21** > Dosimetry in strong magnetic fields; issues and opportunities  
  *Speaker:* B. Raaymakers (The Netherlands)  
  *Abs. Number:* SP-0427
- **09:39** > Dosimetric concepts based on particle track structure  
  *Speaker:* H. Rabus (Germany)  
  *Abs. Number:* SP-0428

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**SYMPOSIUM**

**ULTRASOUNDS IN BRACHYTHERAPY**

**Learning Objectives:**
1. To become familiar with the basics of ultrasound imaging including the potential and limitations especially for brachytherapy applications
2. To present an overview of the essential quality control steps to be used for US based treatment planning
3. To demonstrate practical issues of US based applicator implantation, treatment planning, verification and adaptation for prostate and gynaecological brachytherapy

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**SYMPOSIUM**

**DOSEMETRY CHALLENGES WHEN MOVING AWAY FROM REFERENCE CONDITIONS**

**Chair:** H. Palmans (United Kingdom)
**Co-Chair:** F. Gomez (Spain)

08:45 - 10:00 • Room 117

- **08:45** > TRS-398 12 years later; review of data and applications to novel treatment units  
  *Speaker:* P. Andreo (Sweden)  
  *Abs. Number:* SP-0425
- **09:03** > Synthetic lethal approaches to using drugs with radiation  
  *Speaker:* G. McKenna (United Kingdom)  
  *Abs. Number:* SP-0421
- **09:03** > The challenge of introducing biomarkers in phase 1-2 trials utilizing radiotherapy and novel targeted agents  
  *Speaker:* D. Hollywood (Ireland Republic of)  
  *Abs. Number:* SP-0422
- **09:21** > Design and conduct of early-phase radiotherapy trials with targeted therapeutics  
  *Speaker:* A.H. Ree (Norway)  
  *Abs. Number:* SP-0423
- **09:39** > The Head & Neck model: focus on clinical impact of translational research  
  *Speaker:* R. Corvò (Italy)  
  *Abs. Number:* SP-0424

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**Saturday 12 May 2012**

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Saturday 12 May 2012

**SYMPOSIUM**

**NOVEL CLINICAL STRATEGIES TO REDUCE NORMAL TISSUE INJURY**

**LEARNING OBJECTIVES:**
The session will cover the major axis of research ongoing in the field of normal tissue protection, from stem cell therapy to new targeted approaches (monoclonal antibodies).

**08:45 - 10:00 • Room 120-121**

**CHAIR:** M. Vozenin (France)

**CO-CHAIR:** S. Benavente (Spain)

- **08:45**
  -加速治疗在乳腺癌中的应用
  -**SPEAKER:** P. Koper (The Netherlands)
  -**SP-0437**

- **09:10**
  -加速治疗在乳腺癌中的应用
  -**SPEAKER:** J.R. Yarnold (United Kingdom)
  -**SP-0438**

**POSTER DISCUSSION: 9**

**HEAD AND NECK**

**09:00 - 09:45 • Poster Area**

**CHAIR:** N. Di Muzio (Italy)

**CO-CHAIR:** E.M. Ozsahin (Switzerland)

- **09:00 - 09:45**
  -CTV margin in laryngeal and hypopharyngeal cancer: a histology study
  -**PD-0439**

- **09:21**
  -CTV margin in laryngeal and hypopharyngeal cancer: a histology study
  -**SPEAKER:** C.H.J. Terhaard
  -**PD-0440**

**SYMPOSIUM**

**RADIOBIOLOGY PRINCIPLES: DOSE FRACTIONATION**

**LEARNING OBJECTIVES:**
To provide knowledge and skills to:
1. Understand how different fractionation regimens can influence tumors and the OARs
2. Identify pros and cons of radiobiological strategies
3. Promote the efficacy of different radiation schemes on specific treatment sites

**08:45 - 10:00 • Room 118-119**

**CHAIR:** F. Moura (Portugal)

**CO-CHAIR:** J.F. Calvo Ortega (Spain)

- **08:45**
  -加速治疗在乳腺癌中的应用
  -**SPEAKER:** M. Mangoni (Italy)
  -**SP-0435**

- **09:03**
  -加速治疗在乳腺癌中的应用
  -**SPEAKER:** T. Rutkowski (Poland)
  -**SP-0436**
Saturday 12 May 2012

> 18F-FLT PET; an early predictor of outcome after (chemo)radiotherapy in head and neck cancer  
**B.A.W. Hoeben (The Netherlands), E.G.C. Troost, C.M. van Herpen, J. Bussink, W.J.G. Oyen, J.H.A.M. Kaanders**  
**PD-0444**

> Circulating tumor cells in locally advanced head and neck cancer: a possible tool to predict response to treatment?  
**M. Bugliane (Italy), G. Salvatore, C. Almici, M. Mangoni, C. Polli, F. Consoli, F. Paia, N. Pasinetti, R. Verardi, S.M. Magrini**  
**PD-0445**

> Single vocal cord irradiation: a competitive treatment strategy in early glottic cancer: early results  
**P. Levendag (The Netherlands), D.N. Teguh, P. Janssen, F. Keskin-Camay, P. van Roost, A. Al-Mamgani, B. Heijmen, S.L.S. Kwa, J.D.F. Kerrebijn**  
**PD-0446**

> Incidence and prognosis of HPV induced oropharyngeal cancer  
**L. Cerezo (Spain), C. López Elzaurdia, A. de la Torre, D. Suarez, A. Hervás, A. Ruiz, C. Ballestín, M. López Cabrera**  
**PD-0447**

**SYMPOSIUM**

**COMPLEX MULTI-MODEL APPROACHES: LUNG**

**LEARNING OBJECTIVES:**
1. To learn the impact of various combinations and sequences of radio- and chemotherapy on the outcome of locally advanced NSCLC
2. To position the role of post-operative radiotherapy in operable NSCLC patients
3. To define the role of targeted therapies in locally advanced NSCLC and learn how to improve the therapeutic ratio for this disease
4. To revisit the role of radiotherapy in the multi-disciplinary management of NSCLC

**10:30 - 11:30 • Auditorium**

**Chair:** J. Bernier (Switzerland)  
**Co-Chair:** TBC

> Chemoradiation in NSCLC: divided past, common future?  
**Speaker:** J. Belderbos (The Netherlands)  
**SP-0448**

Saturday 12 May 2012

> Postop RT/ current guidelines and moving points  
**SPEAKER: C. Le Pechoux (France)**  
**SP-0449**

> How to improve the therapeutic ratio for locally advanced non-small cell lung cancer (LANSCLC)  
**SPEAKER: R. Komaki (USA)**  
**SP-0450**

**PROFFERED PAPERS**

**CLINICAL 6: GI**

**10:30 - 11:30 • Room 113-114**

**Chair:** J. Gérard (France)  
**Co-Chair:** G. Mantello (Italy)

> ACCORD 12 trial of neoadjuvant treatment in rectal cancer: clinical results at 3 years. On behalf of PRODIGE group  
**J.P. Gérard (France), D. Azria, S. Gourgou-Bourgade**  
**OC-0451**

> Dose-response of tumour regression after pre-operative chemoradiotherapy for locally advanced rectal cancer  
**A.L. Appelt (Denmark), J. Ploen, I.R. Vogelius, S.M. Bentzen, A. Jakobsen**  
**OC-0452**

> Blood biomarkers predict response to chemoradiation: a prospective study on 260 rectal cancer patients  
**J. Buijsen (The Netherlands), R.G. Van Stiphout, P.P.C.A. Menheere, G. Lammering, P. Lambin**  
**OC-0454**

> Multivariate prediction of follow-up outcome for patients with pancreatic cancer: a pooled data analysis  
**G.C. Mattiucci (Italy), R.G.P.M. van Stiphout, S. Alfieri, F.A. Calvo, J.B. Dubois, B.W. Maidment 111, R.C. Miller, M. Reni, N. Sharma, M. Falconi**  
**OC-0455**
Saturday 12 May 2012

11:20 > Neoadjuvant chemoradiotherapy vs surgery for pancreatic cancer. A multi-centre randomised phase II trial
T. Brunner (United Kingdom), H. Golcher, H. Witzigmann, L. Marti, W. Bechstein, C. Bruns, J. Hauss, S. Merkel, R. Fietkau, W. Hohenberger
OC-0456

■ JOINT SYMPOSIUM
ESTRO-EORTC: QA IN CLINICAL TRIALS
Learning Objectives:
1. The central importance of quality assurance (Q/A) procedures as part of Clinical Trials
2. New developments in clinical trial quality assurance
3. A knowledge of the specific issues that related to radiotherapy Q/A and trial design

10:30 - 11:30 • Room 116
Chair: D. Hollywood (Ireland Republic of)
Co-Chair: TBC

10:30 > QA and credentialing in clinical trials: global status and future challenges
Speaker: C. Hurkmans (The Netherlands) SP-0457

10:50 > A radiation oncologist view on trial QA
Speaker: P. Scalliet (Belgium) SP-0458

11:10 > QA makes a trial stronger: evidence-based medicine in radiation therapy
Speaker: D.C. Weber (Switzerland) SP-0459

■ PROFFERED PAPERS
PHYSICS 9: NON-RIGID REGISTRATION APPLICATIONS IN RADIOTHERAPY
10:30 - 11:30 • Room 117
Chair: S.R. van Kranen (The Netherlands)
Co-Chair: M. Ortiz Seidel (Spain)

10:30 > Optimal registration method of MRI and CT for delineation in radiotherapy planning for breast conserving therapy

10:40 > Structure-specific flexibility improves anatomical accuracy for bladder cancer deformable registration
S. Wognum (The Netherlands), L. Bondar, A. Zolnay, X. Chai, M. Hoogeman, A. Bel
OC-0461

10:50 > Accurate CT/MR vessel-guided non-rigid registration of largely deformed livers
E.M. Vasquez Osorio (The Netherlands), M.S. Hoogeman, A. Mendez Romero, P. Wielopolski, A. Zolnay, B.J.M. Heijmen
OC-0462

11:00 > Nodal CTV deformation cannot be neglected in highly conformal radiotherapy of cervical cancer patients
L.A. Velema (The Netherlands), M.L. Bondar, J.W. Mens, M.S. Hoogeman
OC-0463

11:10 > A population-based model to simulate and predict day-to-day variations in rectum shape during prostate RT
H. van der Werf (The Netherlands), M. van Herk, J. Pluim
OC-0464

11:20 > VALDict: a comprehensive quantitative verification method for deformable image registration in radiotherapy
P.W.H. Wittendorp (The Netherlands), R.J.H.M. Steenbakkers, A. van der Schaaf, J.A. Langendijk, A.A. van ’t Veld, N.M. Sijtsema
OC-0465

Saturday 12 May 2012

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OC-0463

11:10 > A population-based model to simulate and predict day-to-day variations in rectum shape during prostate RT
H. van der Werf (The Netherlands), M. van Herk, J. Pluim
OC-0464

11:20 > VALDict: a comprehensive quantitative verification method for deformable image registration in radiotherapy
P.W.H. Wittendorp (The Netherlands), R.J.H.M. Steenbakkers, A. van der Schaaf, J.A. Langendijk, A.A. van ’t Veld, N.M. Sijtsema
OC-0465

■ PROFFERED PAPERS
PHYSICS 10: DOSE RECONSTRUCTION AND CALCULATION
10:30 - 11:30 • Room 116
Chair: A. Ahnesjö (Sweden)
Co-Chair: M. Bueno (Spain)

10:30 > Virtual source modelling of photon beams for Monte Carlo based radiation therapy treatment planning
M. Sikora (Norway), M. Alber
OC-0466

10:40 > The impact of the MLC modeling for IMRT and VMAT on a patient specific level
M. Sjölin (Denmark), J.M. Edmund, U. Bjelkengren, D. Sjöström, C.F. Behrens
OC-0467
Saturday 12 May 2012

10:50 > Monte Carlo for Quality Assurance of Dose Calculation Accuracy in Seventy Lung SBRT Plans
E. Soisson (Canada), A. Alexander, J. Seuntjens OC-0468

11:00 > Ultra-fast dose calculation for local dose variations in real-time interactive treatment planning
P. Ziegenhein (Germany), C.P. Kamerling, H. Heinrich, U. Oelfke OC-0469

11:10 > Dose comparison between different respiratory phases during lung VMAT delivery using in-treatment 4D cone-beam CT
N. Saotome (Japan), A. Sakumi, S. Kida, T. Onoe, A. Haga, Y. Masutani, K. Ohtomo, H. Yamashita, K. Nakagawa OC-0470

11:20 > Reconstruction accumulated dose on free-breathing motion for abdomen tumors using COMPASS system
C. Ma (China), Y.O.N.G. Yin OC-0471

PROFERRERED PAPERS
RADIOBIOLOGY 4: NORMAL TISSUE
10:30 - 11:30 • Room 118-119
Chair: F. Stewart (The Netherlands)
Co-Chair: N. Cordes (Germany)

10:30 > Effects of gamma irradiation on collagen damage and remodeling
A. Maslennikova (Russian Federation), M. Kochueva, N. Ignatjeva, O. Zakharikina, V. Kamensky, E. Sergeeva, V. Bagratashvili OC-0472

10:40 > Rectal toxicity 6 yrs after high-dose RT for prostate cancer: clinical and dosimetric predictors
T. Rancati (Italy), C. Fiorino, G. Fellin, V. Vavassori, E. Cagna, F. Mauro, G. Girelli, R. Vaidagni OC-0473

10:50 > Cardio-pulmonary consequences of thoracic irradiation in rats
R.P. Coppe, G. Ghodabi, S. van der Veen, H. Faber, B. Bartelds, R.A. de Baer, M.G. Dickinson, S. Brandenburg, J.A. Langendijk, P. van Luijk (The Netherlands) OC-0474

Saturday 12 May 2012

11:00 > The use of IMRT reduces late nephrotoxicity after chemoradiotherapy for gastric cancer
A.K. Trip (The Netherlands), J. Nijkamp, A. Cats, H. Boot, M. Verheij, E.P.M. Jansen OC-0475

11:10 > Sever radiation pneumonitis in locally advanced NSCLC when moving from 3D-CRT to IMRT: A question of constraints
A.A. Khalil (Denmark), M.M. Knap OC-0476

11:20 > Random forest versus published NTCP models for rectal toxicity prediction
J.D. Ospina (France), J. Zhu, E. Le Prisé, A. Bossi, T. Messai, K. Gnep, V. Beckendorf, O. Acosta, A. Simon, R. de Crevoisier OC-0477

PROFERRERED PAPERS
RTT 4: TREATMENT PLANNING: SPARING THE ORGANS AT RISK
10:30 - 11:30 • Room 118-119
Chair: C. Beardmore (United Kingdom)
Co-Chair: E. Martinez Perez (Spain)

10:30 > Swallowing-sparing IMRT for head and neck cancer: treatment planning optimisation and clinical introduction

10:40 > Impact of dose to the PCMs, PGs and SMGs on QoL in head and neck RT: a dosimetric analysis
M. Leech (Ireland Republic of), M. Coffey, D. Hollywood OC-0479

10:50 > The simultaneous integrated boost (SIB) technique in breast cancer: advantages and a limited learning curve
N. Groenendaal, S. Hol, M. Essers, W. Smits, P. Poortmans (The Netherlands) OC-0480

11:00 > Benefit of deep inspiration breath-hold in patients treated with radiotherapy for left-sided breast cancer
A. Ziouech (France), A. Mege, V. Bodez, G. De Rasslaudre OC-0481
Saturday 12 May 2012

11:10  >  IMRT enables further cardiac dose reduction in left sided breast conserving RT using breath hold
H. Rozema (The Netherlands), Y. Kalidien, M. Mast, J. Egmond van, M. Heijenbrok, L. Kempen van, A. Petoukhova, W. Jansen, A. Scholten, H. Struikmans
OC-0482

11:20  >  A planning comparison of intensity-modulated radiotherapy techniques for left-sided breast cancer
M. Jeulink (The Netherlands), M. Dahele, B.J. Slotman, W.F.A.R. Verbakel
OC-0483

POSTER DISCUSSION: 10

MOTION MANAGEMENT
10:30 - 11:15 • Poster Area
Chair: M. van Herk (The Netherlands)
Co-Chair: G. Meijer (The Netherlands)

11:10  >  Initial clinical assessment of a gimbaled linac tumor tracking system in a patient simulation study
PD-0484

11:20  >  Dosimetric evaluation of the intrafraction prostate motion during hypo-fractionated robotic radiosurgery
S. Van de Water (The Netherlands), L. Valli, B.J.M. Heijmen, M.S. Hoogeman
PD-0485

11:30  >  Film dosimetric validation of dose distribution calculations for moving targets in dynamic treatments
M. Schmidt (Denmark), L. Hoffmann, E. Warm, P.R. Poulsen
PD-0486

11:40  >  Deep-inspiration breath-hold reduces the risk of cardiac toxicity and secondary lung cancer after Hodgkin lymphoma
PD-0487

11:45  >  Routine real-time image-guided verification of breath hold in breast cancer patients
H. de Boer (The Netherlands), H.J.G. van den Bongard, W. de Kruijff, B. van Asselen
PD-0488

11:55  >  Patient immobilization and target motion management for fractionated intracranial and uveal robotic radiosurgery
O. Blanck (Germany), S. Seifert, S. Wurster, K. Wolff, A. Zhivov, D. Rasch, D. Rades, V. Tronnier, R. Guthoff, G. Hildebrandt
PD-0489

12:05  >  Clinical evaluation of a laser surface scanning system in 120 patients for improving daily setup accuracy
T. Moser (Germany), K. Schubert, G. Sroka-Perez, M. Uhl, G. Habl, K. Herfarth, J. Debus, C.P. Karger
PD-0490

12:15  >  3D local rectal displacements during radio-chemotherapy of rectal cancer: reduced motion during treatment
C. Salvetti (Italy), E. Scalco, C. Fiorino, P. Passoni, S. Broggi, E. Maggiulli, N. Slim, N. Di Muzio, G. Rizzo, R. Calandrino
PD-0491

12:25  >  Seroma volume change as an indicator for the need of replanning during adaptive RT of breast cancer
PD-0492

11:45 - 12:30 • Auditorium
Chair: V. Valentini (Italy)
Co-Chair: J. Bourhis (France)
Co-Chair: D. Hollywood (Ireland Republic of)

11:45  >  The battle against nasopharyngeal cancer
Speaker: A.W.M. Lee (Hong Kong (SAR) China)
SP-0493
Saturday 12 May 2012

11:57  >  Radiation can be a surgeons best tool  
  Speaker: P. Naredi (Sweden)  
  Abs. No: SP-0494

KLAAS BREUR AWARD LECTURE
25 YEARS OF CLINICAL TRIALS FOR TAILORING EXTERNAL IRRADIATION OF LOCALIZED PROSTATE CANCER (PCA)
12:30 - 13:00  •  Auditorium
  Chair: V. Valentini (Italy)
  12:30  >  25 years of clinical trials for tailoring external irradiation of localized prostate cancer (PCa)  
  Speaker: M. Bolla (France)  
  Abs. No: SP-0495

PROFFERED PAPERS
CLINICAL 7: LUNG
14:30 - 15:45  •  Auditorium
  Chair: J. Barrett (United Kingdom)
  Co-Chair: TBC
  14:30  >  Risk factors for local and regional recurrence in patients with resected N0-N1 non-small cell lung cancer  
  Abs. No: OC-0496

  14:40  >  NSCLC: Tumor size - radiation dose related accelerated (1.8 Gy bid) therapy - final results of a prospective study  
  Abs. No: OC-0497

  14:50  >  Concurrent chemoradiotherapy with or without Cetuximab in NSCLC; toxicity results of a randomized phase II trial  
  Abs. No: OC-0498

Saturday 12 May 2012

15:00  >  Prognostic impact of radiation therapy to the primary tumor in patients with oligometastatic lung cancer  
  Abs. No: OC-0499

15:10  >  Clinical and dosimetric predictors of late esophagus toxicity after IMRT and concurrent chemotherapy for NSCLC  
  C. Chen (The Netherlands), W. Uyterlinde, J. de Bois, M.M. van den Heuvel, M. van Herk, J.J. Sonke, J. Belderbos  
  Abs. No: OC-0500

15:20  >  Irradiation of the left ventricle of the heart is correlated with post-treatment dyspnea in NSCLC patients  
  R. van Stiphout (The Netherlands), G. Nalbantov, D. De Ruysscher, K. Vandecasteele, A. Gulyban, W. De Neve, A. Dekker, B. Hanbeukers, C. Oberije, P. Lambin  
  Abs. No: OC-0501

PROFFERED PAPERS
CLINICAL 8: HEAD AND NECK
14:30 - 15:45  •  Room 113-114
  Chair: S. Magrini (Italy)
  Co-Chair: TBC
  14:30  >  Dose-response of hypothyroidism after primary radiotherapy in carcinoma of the head and neck (HNSSC)  
  M.F. Roenjom (Denmark), C. Brink, L. Hegedüs, J. Overgaard, J. Johansen  
  Abs. No: OC-0502

  14:40  >  QUANTEC dose volume constraints for parotid glands are feasible only in a minority of H&N patients treated with IMRT  
  Abs. No: OC-0503

  14:50  >  A predictive model for tube feeding dependence after curative (chemo-) radiation in head and neck cancer patients  
  Abs. No: OC-0504
Saturday 12 May 2012

PROFFERED PAPERS
PHYSICS 11: SMALL FIELDS DOSIMETRY
14:30 - 15:45 • Room 117
CHAIR: M.M. Aspradakis (Switzerland)
CO-CHAIR: TBC

14:30 > Modifying detector designs for small field dosimetry
T. Underwood (United Kingdom), H. Winter, J. Fenwick, M. Hill
OC-0505

14:40 > Diode detector modelling for small field dosimetry and correction factor sensitivity to source parameterization
G. Cranmer-Sargison (Canada), S. Weston, J.A. Evans, N.P. Sidhu, D.I. Thwaites
OC-0513

14:50 > Diode correction factors in small fields determined with air core fibre optic scintillation dosimeter and EBT2 film
A. Ralston (Australia), P. Liu, K. Warrener, D. McKenzie, N. Suchowerska
OC-0514

15:00 > Ionization chamber correction factors in Yomotherapy and Cyberknife
OC-0515

15:10 > A sub-millimeter plastic scintillation detector for small field measurements delivered by a CyberKnife unit
J. Morin (Canada), D. Béliveau-Nadeau, E. Chung, J. Cygler
OC-0516

15:20 > Small field dosimetry using optical-fiber radioluminescence and RADPOS dosimetry systems
N. Ploquin (Canada), G. Kertzscher, E. Vandervoort, C.E. Andersen, J. Cygler
OC-0517

15:30 > Application of the new IAEA-AAPM dosimetry formalism to clinical IMRT quality assurance
E. Chung (Canada), R. Ruo, J. Seuntjens
OC-0518
Saturday 12 May 2012

- **SYMPOSIUM**
  PET AND MR IMAGING POSSIBILITIES AND PITFALLS WHEN USED FOR RT
  **Learning Objectives:**
  1. To become familiar with the use of MRI and PET for RT planning
  2. To learn about challenges of quantitative imaging
  3. To learn about new imaging developments relevant for RT planning

  **14:30 - 15:45 • Room 116**
  **Chair:** K. Tanderup (Denmark)
  **Co-Chair:** P. Carrasco de Fez (Spain)

  - **14:30** > Impact of image reconstruction and quantitative analysis on PET for RT planning  
    **Speaker:** D. Thorwarth (Germany)  
    **Abs. Number:** SP-0519

  - **14:55** > The use of MRI in RT planning: potential, pitfalls and solutions  
    **Speaker:** R. Wirestam (Sweden)  
    **Abs. Number:** SP-0520

  - **15:20** > Dynamic and diffusion weighted MRI: how to use it for RT  
    **Speaker:** E. Malinen (Norway)  
    **Abs. Number:** SP-0521

- **SYMPOSIUM**
  HETEROGENEITY IN TREATMENT RESPONSE: THE WAY TO PERSONALISED TREATMENT
  **Learning Objectives:**
  1. To understand targeted therapies in oncology
  2. To get an insight in potential biomarkers for response
  3. To understand tumor hypoxia and possible biomarkers for its radiosensitization

  **14:30 - 15:45 • Room 120-121**
  **Chair:** G. Lammering (The Netherlands)
  **Co-Chair:** J. Gomez-Millan Barrachina (Spain)

  - **14:30** > EGFR signaling as a basis for personalize medicine  
    **Speaker:** M. Krause (Germany)  
    **Abs. Number:** SP-0522

  - **14:55** > The importance of RAS mutations for targeted therapy in colon cancer  
    **Speaker:** K. Haustermans (Belgium)  
    **Abs. Number:** SP-0523

Saturday 12 May 2012

- **SYMPOSIUM**
  RADIOBIOLOGY PRINCIPLES: DOSE MODIFIERS
  **Learning Objectives:**
  1. To become familiar with how dose modifiers work, the therapeutic gain in RT as well as the limitations and the implications for the clinic
  2. To understand the effect of the time interval between RT and drugs with regards to the effect on tumor control and normal tissue damage and the pharmacological considerations
  3. To appreciate the benefit of radioprotectors with regards to biological mechanisms and the efficacy with regard to reduction of side effects as well as the potential risks

  **14:30 - 15:45 • Room 118-119**
  **Chair:** G. McColl (The Netherlands)
  **Co-Chair:** M.A. Gambacorta (Italy)

  - **15:20** > Radioprotectors: general overview  
    **Speaker:** H. Langendijk (The Netherlands)  
    **Abs. Number:** SP-0527

- **SYMPOSIUM**
  PET AND MR IMAGING POSSIBILITIES AND PITFALLS WHEN USED FOR RT
  **Learning Objectives:**
  1. To become familiar with the use of MRI and PET for RT planning
  2. To learn about challenges of quantitative imaging
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  **14:30 - 15:45 • Room 116**
  **Chair:** K. Tanderup (Denmark)
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  - **14:30** > Impact of image reconstruction and quantitative analysis on PET for RT planning  
    **Speaker:** D. Thorwarth (Germany)  
    **Abs. Number:** SP-0519

  - **14:55** > The use of MRI in RT planning: potential, pitfalls and solutions  
    **Speaker:** R. Wirestam (Sweden)  
    **Abs. Number:** SP-0520

  - **15:20** > Dynamic and diffusion weighted MRI: how to use it for RT  
    **Speaker:** E. Malinen (Norway)  
    **Abs. Number:** SP-0521

- **SYMPOSIUM**
  HETEROGENEITY IN TREATMENT RESPONSE: THE WAY TO PERSONALISED TREATMENT
  **Learning Objectives:**
  1. To understand targeted therapies in oncology
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  **14:30 - 15:45 • Room 120-121**
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    **Abs. Number:** SP-0522

  - **14:55** > The importance of RAS mutations for targeted therapy in colon cancer  
    **Speaker:** K. Haustermans (Belgium)  
    **Abs. Number:** SP-0523

- **POSTER DISCUSSION: 11**
  PREDICTIVE AND SNP

  **14:45 - 15:30 • Poster Area**
  **Chair:** J. Jaal (Estonia)
  **Co-Chair:** P. van Luijk (The Netherlands)

  > Germline MRE11 variants predictive of radiotherapy outcomes in bladder cancer by next-generation sequencing  
    **Abs. Number:** PD-0528
Saturday 12 May 2012

JOINT SYMPOSIUM

ESTRO-EANM: THE FUTURE OF RADIO-ISOTOPE THERAPIES (BONE METS, THYROID, NEUROENDOCRINE, LYMHPHOMA)

LEARNING OBJECTIVES:
1. To understand the potential role of radiolabelled antibodies and target treatments in the treatment of malignancy
2. To review the issues relating to dosing and timing of the pretargeting agents
3. To understanding the particular issues relating to dosimetry in radiopharmaceutical treatment

16:15 - 17:15 • Auditorium
Chair: D. Hollywood (Ireland Republic of)
Co-Chair: W. Oyen (The Netherlands)

16:15 > Radium-223 in the treatment of advanced prostate cancer
Speaker: V. Lewington (United Kingdom)

16:35 > Translational studies on pretargeted radioimmunotherapy of colorectal cancer
Speaker: O. Boerman (The Netherlands)

16:55 > Radiolabelled somatostatin analogues in neuroendocrine tumours
Speaker: F. Jamar (Belgium)

SYMPOSIUM
EU PROJECTS
16:15 - 17:30 • Room 113-114
Chair: J. Bourhis (France)

16:15 > ARTFORCE Consortium: an update
Speaker: C. Rasch (The Netherlands)

16:30 > ARTFORCE: adaptive radiotherapy
Speaker: J. Sonke (The Netherlands)

16:45 > The ANDANTE Project: refining risk estimates from neutrons
Speaker: A. Ottolenghi (Italy)

17:00 > The risk of second cancers following proton therapy
Speaker: K. Trott (United Kingdom)
Saturday 12 May 2012

**JOINT SYMPOSIUM**

**ESTRO-ASTRO: NEW TECHNOLOGIES IN RADIATION ONCOLOGY ARE ALWAYS BETTER: FACT OR FICTION?**

**Learning Objectives:**
1. To collect the available evidence of the clinical impact of new technologies in the tumor where their application was extended
2. To have an insight on the main goals of new technologies some years after their first clinical implementation
3. To perceive the limitations, pitfalls and uncertainties in the implementation of new technologies
4. To be informed on the ongoing clinical perspective validation of their impact

**16:15 - 17:15 • Room 115**

**Chair:** V. Valentini (Italy)

**Co-Chair:** L. Gunderson (USA)

16:15 > Protons - y0 have or not to have, that is the question?  
**Speaker:** L. Gunderson (USA)  
SP-0543

16:35 > IMRT: the potential use and benefit of dose escalation  
**Speaker:** C. Betka (Germany)  
SP-0544

16:55 > IGRT: the challenge and potential for intra-prostatic boosts  
**Speaker:** T. Budiharto (The Netherlands)  
SP-0545

**DEBATE**

**THIS HOUSE BELIEVES THAT 1% IMPROVED DOSIMETRIC ACCURACY IS MORE VALUABLE THAN 1 MM LESS PTV MARGIN**

**16:15 - 17:15 • Room 117**

**Chair:** D. Verellen (Belgium)

**Co-Chair:** I. Modolell i Farré (Spain)

16:15 > For the motion  
**Speaker:** M. Schwarz (Italy)  
SP-0546

16:35 > 1% improved dosimetric accuracy is more valuable than 1 mm less PTV margin - against the motion  
**Speaker:** M. van Herk (The Netherlands)  
SP-0547

Saturday 12 May 2012

**PROFFERED PAPERS**

**PHYSICS 12: TREATMENT PLANNING AND OPTIMISATION**

**16:15 - 17:15 • Room 116**

**Chair:** F. Lohr (Germany)

**Co-Chair:** M. Hermida Lopez (Spain)

16:15 > Towards fully automated multi-criterial plan generation: a prospective clinical study  
**R. Voet, M.L.P. Dirkx (The Netherlands), S. Breedveld, D. Fransen, P.C. Levendag, B.J.M. Heijmen**  
OC-0548

16:25 > Is it possible to produce acceptable IMRT plans free from planner bias using an automated planning technique?  
**C. Stanford (United Kingdom), C. Boylan, C. Rowbottom**  
OC-0549

16:35 > Beam orientation in stereotactic radiosurgery using artificial neural network  
**A. Skrobala (Poland)**  
OC-0550

16:45 > Preoperative accelerated partial breast irradiation: VMAT versus IMRT comparison using pareto fronts  
**A. Wolf (The Netherlands), T. Janssen, A. Duijn, P. Eikhuizen, S. Vreeswijk, E. Damen, C. van Vliet-Vroegindewij**  
OC-0551

16:55 > Dose painting by numbers: how many segments are needed to create clinically acceptable plans?  
**D. Schuring (The Netherlands), J. Steenhuijsen, M. Bal, G. Meijer**  
OC-0552

17:05 > Fast Monte-Carlo based IMRT planning for the MRI linear accelerator (MRL)  
**G.H. Bol (The Netherlands), S. Hissoiny, J.J.W. Lagendijk, B.W. Raaymakers**  
OC-0553
Saturday 12 May 2012

DEBATE
THIS HOUSE BELIEVES THAT SNPS WILL BE USEFUL PREDICTORS OF NORMAL TISSUE RESPONSE IN THE FUTURE
16:15 - 17:15 • Room 120-121
Chair: J. Overgaard (Denmark)
Co-Chair: L.A. Henríquez Hernández (Spain)
16:15 > For the motion
   Speaker: C. West (United Kingdom) SP-0554
16:35 > SNPs for prediction of normal tissue complication risk -- probably not the quick fix that we once imagined
   Speaker: C.N. Andreassen (Denmark) SP-0555
16:55 > SNPs will be useful predictors of normal tissue response in the future - Conclusions for the motion
   Speaker: M.B. Parliament (Canada) SP-0556
17:05 > Against the motion - Go for big and not for little
   Speaker: E. Dikomey (Germany) SP-0557

PROFFERED PAPERS
RTT 5: TREATMENT PLANNING AND DOSE CALCULATION
16:15 - 17:15 • Room 118-119
Chair: TBC
Co-Chair: H.P. van der Laan (The Netherlands)
16:15 > Total marrow irradiation with volumetric modulated arc therapy: early experience and practical considerations
   P. Mancosu (Italy), R. Navarria, G. Reggiori, S. Castiglioni, C. Pellegrini, M. Catalano, F. Lobefalo, A. Fogliata, L. Cozzi, M. Scorsetti OC-0558
16:25 > To arc or not to arc; comparing dose to the bowel for patients receiving radiation therapy for spinal cord compression
   D.A. Schut (Denmark), M.C. Aznar, J.P. Bangsgaard, S.A. Engelholm OC-0559

Saturday 12 May 2012

16:35 > The accuracy and clinical quality of stereotactic lung RapidArc planning in Eclipse using Acuros and AAA
   M. Essers (The Netherlands), P. Kroon, S. Hol, G. D’Olieslager OC-0560
16:45 > Whole brain irradiation with hippocampal sparing and dose escalation on multiple brain metastases
   F. Fels (Germany), N. Wiedenmann, M. Schmucker, C. Nieder, A.L. Grosu, V. Prokic OC-0561
16:55 > Monte Carlo dose planning for total body irradiation
   M. Krantz (Sweden), K. Müntzing, R. Chakarova OC-0562
17:05 > Planning abutting fields in proton therapy delivered with pencil beam scanning: assessment of a commercial TPS
   F.F. Fellin (Italy), S.M. Schwarz OC-0563

POSTER DISCUSSION: 12
GI AND HEALTH ECONOMICS
16:15 - 17:00 • Poster Area
Chair: P. Scalliet (Belgium)
Co-Chair: TBC
16:15 > The Malthus Programme: a new model for simulation of evidence-based radiotherapy demand in England
   R. Jena (United Kingdom), C.E. Round, T. Mee, N.F. Kirkby, T. Cooper, P. Hoskin, M.V. Williams PD-0564
16:25 > Diffusion-weighted MR imaging for patient selection for organ-sparing treatment in locally advanced rectal cancer
   M. Intven (The Netherlands), O. Reerink, M.E.P. Philippens PD-0565
16:35 > Preoperative chemoradiation for unresectable rectal cancer: Interim analysis of a multicentre randomized study
   K. Bujko (Poland), A. Nasirowa-Guttmejer, L. Wyrwicz, A. Rutkowski, T. Lesniak, M. Bebenek, M. Kryj, A. Radkowski, W. Markiewicz, E. Cieslak-Zeromska PD-0566
Saturday 12 May 2012

> Biometric identification of radiotherapy patients
  E. Lartigau (France)  PD-0567

> Phase II study of neo adjuvant treatment with Avastin, Xeloda and Eloxitin in rectal cancer (AXE BEAM)

> A population-based study of radiosurgery for brain metastases: factors limiting use among eligible patients
  D. Hodgson (Canada), A. Charpentier, A. Ng, G. Bahl, C. Menard, J. San Miguel  PD-0569

> Nomogram predicting survival after R0 gastrectomy: validation in patients with postoperative chemoradiation

> Rapid learning in practice: validation of an EU population-based prediction model in USA trial data for H&N cancer

Sunday 13 May 2012

**TEACHING LECTURE**
**CURRENT PRACTICE AND MOVING POINTS: PRIMARY BRAIN**
*08:30 - 09:10 • Room 112*
**Chair:** M. Brada (United Kingdom)

08:30 > Current practice and moving points: primary brain  
**Speaker:** U. Ricardi (Italy)  SP-0572

**TEACHING LECTURE**
**CURRENT PRACTICE AND MOVING POINTS: SARCOMA**
*08:30 - 09:10 • Room 113-114*
**Chair:** F. Calvo (Spain)

08:30 > Current practice and moving points: sarcoma  
**Speaker:** M. Krengli (Italy)  SP-0573

**TEACHING LECTURE**
**NEW CLINICAL FRACTIONATION MODELS IN HEAD AND NECK RADIATION THERAPY**
*08:30 - 09:10 • Room 115*
**Chair:** V. Budach (Germany)

08:30 > New clinical fractionation models in head and neck radiation therapy  
**Speaker:** P. Maingon (France)  SP-0574

**TEACHING LECTURE**
**BIOLOGICAL OPTIMISATION IN THE CLINIC**
*08:30 - 09:10 • Room 117*
**Chair:** B. Sanchez-Nieto (Chile)

08:30 > Biological optimisation in the clinic  
**Speaker:** A.E. Nahum (United Kingdom)  SP-0575
Sunday 13 May 2012

TEACHING LECTURE
MODELS FOR SECONDARY CANCER INDUCTION AT RADIOTHERAPY DOSE. AN UPDATE
08:30 - 09:10 • Room 116
Chair: J. Cosset (France)
08:30 > Models for secondary cancer induction at radiotherapy dose. An update
Speaker: U. Schneider (Switzerland) SP-0576

TEACHING LECTURE
WHAT IS A STEM CELL AND WHY SHOULD I CARE?
08:30 - 09:10 • Room 120-121
Chair: TBC
08:30 > What is a stem cell and why should I care
Speaker: M. Vooijs (The Netherlands) SP-0577

TEACHING LECTURE
RTT RESPONSIBILITIES AND INVOLVEMENT IN RESEARCH
08:30 - 09:10 • Room 118-119
Chair: A. Vaandering (Belgium)
08:30 > RTT responsibilities and involvement in research
Speaker: TBC SP-0578

SYMPOSIUM
CURRENT PRACTICE AND CONTROVERSIES: BRAIN TUMOURS
09:15 - 10:30 • Room 112
Chair: C. Belka (Germany)
Co-Chair: F. Grillo Ruggieri (Italy)
09:15 > Combination of targeted drugs with radiotherapy in glioblastoma = from mechanisms to therapy
Speaker: E. Moyal-Cohen-Jonathan (France) SP-0579

Sunday 13 May 2012

09:40 > Low grade gliomas / treatment sequence (current practice and future trends)
Speaker: R. Kortmann (Germany) SP-0580

10:05 > Treating brain metastases: current approaches and controversies
Speaker: G. Minniti (Italy) SP-0581

SYMPOSIUM
PREDICTION OF COMPLETE RESPONSE CAN ENHANCE ORGAN PRESERVATION IN RECTAL CANCER
Learning Objectives:
1. The audience will be able to incorporate clinical and imaging parameters in their decision to offer rectal cancer patients the possibility of organ saving procedures

09:15 - 10:30 • Room 113-114
Chair: C. Marijnen (The Netherlands)
Co-Chair: L. Cerezo (Spain)
09:15 > PCR: a subgroup of patients with better survival or an unsafe surrogate endpoint
Speaker: V. Valentini (Italy) SP-0582

09:33 > Diffusion MR prediction: standard or research
Speaker: R. Beets-Tan (The Netherlands) SP-0583

09:51 > PET-CT prediction of response of rectal cancer to neo-adjuvant therapy: standard or research?
Speaker: C. Deroose (Belgium) SP-0584

10:09 > Modelling response prediction on clinical and imaging evidences
Speaker: G. Lammering (The Netherlands) SP-0585
**Sunday 13 May 2012**

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**SYMPOSIUM**

**HOW DEEP DOES HPV CHANGE H&N TREATMENT STRATEGY?**

**Learning Objectives:**
1. To describe and discuss the epidemiology and clinical features of HPV induced head and neck cancer
2. To describe the biology, detection methods and targeting of HPV
3. To discuss the role of HPV status for prognosis and choice of treatment

**09:15 - 10:30 • Room 115**

**Chair:** C. Grau (Denmark)

**Co-Chair:** S. Rivera (France)

- **09:15** > Epidemiology and clinical features  
  **Speaker:** P. Lassen (Denmark)  
  **SP-0586**

- **09:40** > Biology and targeting of HPV  
  **Speaker:** L. Licitra (Italy)  
  **SP-0587**

- **10:05** > HPV positive vs. HPV negative oropharyngeal carcinoma: deescalating vs. intensified treatment  
  **Speaker:** B. O’Sullivan (Canada)  
  **SP-0588**

**SYMPOSIUM**

**ADVANCES IN DOSE CALCULATION AND OPTIMISATION ALGORITHMS. IMPROVING PLANNING EFFICACY AND PLAN QUALITY**

**09:15 - 10:30 • Room 117**

**Chair:** T. Knöös (Sweden)

**Co-Chair:** M. Duch (Spain)

- **09:15** > MCO for IMRT planning  
  **Speaker:** D. Craft (USA)  
  **SP-0589**

- **09:33** > Multi-criteria optimization in radiation oncology: from priorisation to interaction  
  **Speaker:** A. Schlaefer (Germany)  
  **SP-0590**

- **09:51** > Introduction to grid-based solvers of Boltzmann transport equation  
  **Speaker:** O. Vassiliev (Canada)  
  **SP-0591**

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**Sunday 13 May 2012**

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**SYMPOSIUM**

**NANOPARTICLES IN RT**

**Learning Objectives:**
1. Description and overview of nanotechnology and potential applications
2. Understanding the clinical perspective on radiosensitisers
3. Explanation of nanoparticle mediated radiation dose enhancement
4. Identification of future potential areas of research and clinical trials

**09:15 - 10:30 • Room 116**

**Chair:** B. McClean (Ireland Republic of)

**Co-Chair:** J. Vilar Palop (Spain)

- **09:15** > Green nanotechnology generates gold nanoparticles (AuNP-EGCG): implications in prostate tumor therapy  
  **Speaker:** K. Katti (USA)  
  **SP-0593**

- **09:33** > Physical perspective on radiation response modulation of tumors using gold nanoparticles  
  **Speaker:** S.H. Cho (USA)  
  **SP-0594**

- **09:51** > Gold nanoparticles as radiosensitisers  
  **Speaker:** S. Jain (Canada)  
  **SP-0595**

- **10:09** > Toronto experience in gold nanoparticles radiosensitization  
  **Speaker:** J. Pignol (Canada)  
  **SP-0596**
Sunday 13 May 2012

**DEBATE**

**HOW IMPORTANT ARE TUMOUR AND NORMAL TISSUE STEM CELLS IN RT**

*Learning Objectives:*
1. Concept of stem cells in normal tissues and solid tumours
2. Potential implications for radiation oncology
3. Current challenges and future research directions

**09:15 - 10:30 • Room 120-121**

*Chair:* D. Zips (Germany)
*Co-Chair:* R. Coppes (The Netherlands)

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<td>C. Limoli (USA)</td>
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<td>09:40</td>
<td>M. Martin (France)</td>
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**SYMPOSIUM**

**RTT RESPONSIBILITIES AND INVOLVEMENT IN RESEARCH**

*Learning Objectives:*
1. Based on clinical examples, focus will be on RTTs participation in development and research activities, both as an independent profession and as part of a team
2. The future role for RTTs will be discussed. The importance of specialized RTT’s and how the role can be developed.
3. To become acquainted with research processes and how research projects can be developed and implemented

**09:15 - 10:30 • Room 118-119**

*Chair:* A. Boejen (Denmark)
*Co-Chair:* TBC

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<td>G. Fagan (Ireland Republic of)</td>
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<td>J. Cox (Australia)</td>
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<td>10:05</td>
<td>C Meade (Ireland Republic of)</td>
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**SYMPOSIUM**

**H&B NEW TRIALS DESIGN: RADIOTHERAPY TECHNIQUES REQUIREMENTS**

*Learning Objectives:*
1. To select patients who need IMRT
2. To select patients who may benefit from Adaptive Radiotherapy
3. To assess the role of IMRT in patients with Nasopharynx Cancer
Sunday 13 May 2012

11:00 - 12:00 • Room 113-114
**Chair:** R. Corvò (Italy)
**Co-Chair:** J.A. Medina (Spain)

**11:00** > IMRT for which patients and for what benefit?
**Speaker:** C. Nutting (United Kingdom)  
[SP-0608]

**11:20** > Intensity modulated radiation therapy (IMRT) for head & neck tumors: toward tailored and adaptive treatments
**Speaker:** V. Grégoire (Belgium)  
[SP-0609]

**11:40** > IMRT for NPC
**Speaker:** D.L.W. Kwong (Hong Kong (SAR) China)  
[SP-0610]

**SYMPOSIUM**
**PREDICTIVE BIOMARKERS IN RT**
**Learning Objectives:**
1. The complexities and challenges of using biomarkers as surrogate markers for measuring tumor response
2. An update on the potential range of biomarkers that will be used in radiation oncology clinical trials
3. Future cancer biomarker development and the integration of biomarkers in future clinical trials using radiotherapy and targeted drugs

**11:00 - 12:00 • Room 115**
**Chair:** D. Hollywood (Ireland Republic of)
**Co-Chair:** M. Mangoni (Italy)

**11:00** > Pre-clinical predictive essays and platforms
**Speaker:** E. Deutsch (France)  
[SP-0611]

**11:20** > Do our mothers’ genes influence radiation response?
**Speaker:** P. Lambin (The Netherlands)  
[SP-0612]

**11:40** > Use in clinical trials
**Speaker:** J. Overgaard (Denmark)  
[SP-0613]

Sunday 13 May 2012

**SYMPOSIUM**
**EU PROJECTS 2**
**11:00 - 11:30 • Room 117**
**Chair:** D.R. Olsen (Norway)
**Co-Chair:** A. Ottolenghi (Italy)

**11:00** > The role of radiation protection in radiation therapy - concepts and legislation,
**Speaker:** T. Knöös (Sweden)  
[SP-0614]

**11:10** > The status of radiation protection training in Europe - the MEDRAPET survey
**Speaker:** D.R. Olsen (Norway)  
[SP-0615]

**11:30** > ULICE - Union of Light Ion Centres in Europe
**Speaker:** R. Orecchia (Italy)  
[SP-0616]

**SYMPOSIUM**
**MC PLATFORMS, GETTING MC EASY FOR ROUTINE USE IN MP**
**Learning Objectives:**
1. To understand the need for efficient, user friendly and accurate Monte Carlo based treatment planning systems for the megavoltage photon beams used in radiation therapy
2. To learn about new Monte Carlo codes with improved efficiency and accuracy for calculations related to new treatment modalities and units
3. To realize that using advanced graphical interfaces, Monte Carlo calculations do not require specialized knowledge and can be performed easily

**11:00 - 12:00 • Room 116**
**Chair:** P. Andreo (Sweden)
**Co-Chair:** A. Sanchez-Reyes (Spain)

**11:00** > SMCP - an efficient Monte Carlo treatment planning system
**Speaker:** P. Manser (Switzerland)  
[SP-0617]

**11:20** > EGSnrc for the investigation of ionization chambers in radiotherapy dosimetry
**Speaker:** J. Wulff (Germany)  
[SP-0618]
Sunday 13 May 2012

#### SYMPOSIUM

**COMPARISON STUDIES: ONGOING RESEARCH**

**Learning Objectives:**
1. To outline the importance of comparison studies
2. To outline the survival and toxicity from published studies
3. To understand to define the margin for rectal cancer from GTV to PTV

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11:00 - 12:00 • Room 118-119

**Chair:** A. Osztavics (Austria)

**Co-Chair:** TBC

11:00 > ICORG 09-06 An ongoing prospective randomised trial comparing 3D RT with IMRT for the treatment of endometrial cancer

**Speaker:** L. O’Sullivan (Ireland Republic of)  
**Abs. Number:** SP-0620

11:20 > 3-years follow-up of a moderate hypofractionation scheme with endorectal balloon for EBRT of the prostate

**Speaker:** G. McColl (The Netherlands)  
**Abs. Number:** SP-0621

11:40 > Shape variation of the clinical target volume in rectal cancer: comparison between short-course and long-course RT

**Speaker:** J. Nijkamp (The Netherlands)  
**Abs. Number:** SP-0622

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#### DEBATE

**THE HOUSE BELIEVES THAT BIOLOGICAL OPTIMISATION SUPERSEDES PHYSICAL OPTIMISATION**

**Learning Objectives:**
1. To understand the current parameters for treatment plan optimization, their advantages and their shortcomings
2. To realize that different opinions exist on the validity of the current biological models for treatment plan optimization

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3. To understand the general value which lies in the concept of biological treatment plan optimization and, based on this, the value of scientific research in this field as well as the clinical need to closely and critically follow the evidence

12:00 - 12:45 • Room 112

**Chair:** M. Baumann (Germany)

**12:00 >** For the motion

**Speaker:** J. Deasy (USA)  
**Abs. Number:** SP-0623

**12:20 >** Against the motion - biological optimization is still immature

**Speaker:** D. R. Olsen (Norway)  
**Abs. Number:** SP-0624

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11:40 > PRIMO: a graphical environment for the automatic simulation of Varian and Elekta linacs with Penelope

**Speaker:** L. Brualla (Germany)  
**Abs. Number:** SP-0619

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### CLINICAL TRACK: BREAST

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<tr>
<td>External beam partial breast irradiation: difference in pre-</td>
<td>F. van der Leij (The Netherlands), R.H.M. Elkhuizen, T.M. Janssen,</td>
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<td>and postoperative target volume delineation</td>
<td>P. Poortmans, M. van der Sangen, A.N. Scholten, C. van Vliet-Vroegindewij, L.J. Boersma</td>
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<td>Prediction of relapse and contralateral tumor using breast</td>
<td>R. Pacelli (Italy), M. Conson, L. Cella, R. Liuzzi, R. Solla, V. Iorio,</td>
<td>PO-0626</td>
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<td>cancer clinical variables and histochemical subtypes</td>
<td>A. Farèlla, M. Salvatore</td>
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<td>Results with accelerated hypofractionation breast irradiation</td>
<td>M. Cabezón Pons (Spain), N. Rodríguez Ibarria, L. Garcia, M. Lloret,</td>
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<td>Toxicity predictors for hypofractionated IMRT in breast cancer</td>
<td>A. Fodor (Italy), P. Mangilli, C.I. Fodor, G. Rinaldin, E. Villa,</td>
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<td>results of a phase II prospective study</td>
<td>M. Pasetti, C. Fiorino, I. Dell’Oca, A. Bolognesi, N.G. Di Muzio</td>
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<td>IMRT and regional nodal irradiation in left sided breast cancer</td>
<td>K. Thabet, M. Abd El-Mozej, M. El-Haddad, M. Sayed, N. El-Sherbiny,</td>
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<td>patients can spare more normal tissues</td>
<td>A. El-Kashef, S. El-Mesidy (Egypt)</td>
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<td>PBI with interstitial high dose rate brachytherapy:</td>
<td>I. Palumbo (Italy), A. Farneti, G. Capezzali, L. Falcinelli, M.</td>
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<td>Margaritelli, V. Lancellotta, C. Zucchetti, M. Marcantonini, C.</td>
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<td>Inter-fraction motion during 3D-conformal external beam</td>
<td>A. Levy (France), J. Autixier, I. Dumas, A. Boros, C. El-Khoury,</td>
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<td>accelerated partial breast irradiation</td>
<td>V. Fallet, C. Rossier, A. Britten, S. Heymann, C. Bourgier</td>
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<td>Toxicity and cosmetic outcome of three-dimensional conform</td>
<td>M. Gatti (Italy), S. Brescia, R. Ponzione, R. Panaia, A. Salatino, M.</td>
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<td>radiotherapy for partial breast irradiation</td>
<td>Stasi, R. Gabriele</td>
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<td>Early toxicity of intraoperative electron radiotherapy as tumor bed</td>
<td>A. Wittig (Germany), C. Hornnickel, U.S. Albert, L. Zwiorek, K. Zink,</td>
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<td>boost during breast conserving surgery</td>
<td>R. Engenhart-Cabillic</td>
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<td>Predictive factors for lung injury after intensity-modulated</td>
<td>H. Kim (Korea Republic of), H.S. Bae, M.Y. Lee, K.H. Cheong, K.J. Kim,</td>
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<td>radiotherapy in whole breast irradiation</td>
<td>T.J. Han, S.K. Kang, S. Park, T. Hwang</td>
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<td>Discordance in ER/PR and HER2 testing between biopsy and</td>
<td>G.K. Azad (United Kingdom), J.M. Singer, S. Jader</td>
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<td>surgical specimens in breast cancer</td>
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<td>Whole breast irradiation using the RPM system - the benefit of a</td>
<td>M. Ben-David (Israel), H. Granot, M. Ben-Ayun, D. Elezra, R.M.</td>
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<td>new technique</td>
<td>Pfeffer, Z. Symon, V. Pyatigorskaya</td>
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<td>How feasible is nodal irradiation with tangential fields in breast</td>
<td>J. Sanz (Spain), E. Fernández-Velilla, N. Rodriguez, M. Prieto, N.</td>
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<td>cancer? A comparative technique study</td>
<td>Anton, R. Foro, J. Flores, O. Pera, A. Reig, M. Algarra</td>
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### Posters

**CLINICAL TRACK: CNS AND HAEMATOLOGY**

- Estimated risks of cardiac disease and secondary cancers after highly conformal radiotherapy for Hodgkin lymphoma  
  **M.V. Maraldo (Denmark), M.C. Aznar, N.P. Brodin, I.R. Vogelius, P.M. Rosenschöld, P.M. Petersen, L. Specht**  
  PO-0645

- The clinical utility of prognostic scoring systems in radiosurgery (RS) patients with brain metastases (BM)  
  PO-0646

- Acoustic neuromas: evaluation of outcomes and toxicity with the use of fractionated stereotactic radiotherapy  
  **D.K. Woolf (United Kingdom), M.H. Williams, D.R. Henderson, C.L. Goh, R. Menashy, N. Simpson, B. Mastroianni, C. Collis**  
  PO-0647

- Survival in patients with glioblastoma receiving optimal local treatment  
  **W. Eppinga (The Netherlands), F.J. Lagerwaard, P.C. de Witt Hamer, J. Buter, B.J. Slotman**  
  PO-0649

- Analysis of perfusion magnetic resonance changes in radiated white matter in patients with glioblastoma  
  **I. Valdivieso (Spain), E. Verger, L. Oleaga, T. Pujol, L.A. Caral, T. Ribalta, T. Boget, E. Pineda, F. Graus**  
  PO-0650

- A comparative study of VMAT (RapidArc) and 3-D conformal radiotherapy for cranio-spinal irradiation  
  **T. Alawi (Saudi Arabia), N. Safadi, S. Al-Ghamdi, N. Mail, A. Saoudi**  
  PO-0651
Posters

> Can site and diameter of brain metastases influence hippocampal dose in rotational techniques?
  S. Chiesa (Italy), M. Balducci, L. Azario, S. Gaudino, G. Mattiucci, F. Cellini, L. De Filippo, M. Ferro, C. Anile, V. Valentini

PO-0652

> Low-dose fractionated radiotherapy and chemotherapy for recurrent or progressive Glioblastoma: a final report
  B. Diletto (Italy), M. Balducci, S. Chiesa, L. De Filippo, M. Ferro, A. Mangioli, G. Mantini, G.R. D’Agostino, C. Anile, V. Valentini

PO-0653

> QA in the EORTC 22042-26042 trial for atypical and malignant meningioma: the dummy run and individual case review
  M. Coskun (Belgium), C.W. Hurkmans, W. Straube, C. Melidis, M. Tomsej, S. Villa, D.C. Weber

PO-0654

> Reducing haematological toxicity for adult patients receiving craniospinal irradiation with helical tomotherapy
  K. Petersson (Sweden), M. Gebre-Medhin, C. Ceberg, R. Engström, T. Knööls, E. Kjellén

PO-0655

> Apoptosis imaging with 18F-ML-10 for early detection of response of brain metastases to stereotactic radiosurgery
  D.E. Heron (USA), K. Beal, H. Wagner, A. Allen, S.E. Weiss, Y. Shoshan, M.B. Tomblyn, T. Davidson, I.L.A.N. Ziv, M. Ben-Ami

PO-0656

> Radiosurgery of brain metastases using leksell gamma knife -results of 400 treated patients
  G. Simonova (Czech Republic), R. Liscak

PO-0657

> When to start radiotherapy in glioblastoma multiforme(GBM) patients. Is it sooner, the best?
  A. Alvarado-Astudillo (Spain), N. Feltes, E. Mur, C. Arias, G. Marín, M. Macia, J. Pardo, J.M. Solé

PO-0658

Posters

■ CLINICAL TRACK: ELDERLY

> Radiotherapy and temozolomide in elderly patients with glioblastoma
  R. Caivano (Italy), A. Fiorentino, C. Chiumento, M. Cozzolino, P. Pedicini, S. Clemente, V. Fusco

PO-0659

■ CLINICAL TRACK: GASTROINTESTINAL TUMOURS (UPPER AND LOWER GI)

> Patterns of recurrence following D2 resection for gastric cancer: implications for postoperative radiotherapy
  J. Chang (Korea Republic of), J. Lim, S. Noh, W. Hyung, J. An, Y. Lee, S. Rha, W. Koom

PO-0660

> Does splenectomy affect the outcome of postoperative radiochemotherapy for gastric cancer?
  R. Suwinski (Poland), J. Wydmanski

PO-0661

> Phase II study of preoperative helical tomotherapy with a simultaneous integrated boost for rectal cancer

PO-0662

> Downstaging of rectal cancer after short course radiotherapy followed by delayed surgery
  S. Faria (Canada), N. Kopek, T. Hijal, S. Liberman, P. Charlebois, B. Stein, S. Meterissian, A. Meguerditchian, E. Debroux, D. Tataryn

PO-0663

> Mean Distance to Conformity as a tool for assessing outlining in the UK SCOPE 1 oesophageal chemoradiotherapy trial
  S. Gwynne (United Kingdom), C. Hurt, E. Spezi, T. Crosby, J. Staffurth, R. Jena

PO-0664

> Evident esophageal tumour progression between the diagnostic FDG-PET and the FDG-PET for radiotherapy planning

PO-0665
Posters

> Predictive factors for pericardial effusion in oesophageal cancer patients treated with chemoradiotherapy
  K. Hayashi (Japan), N. Nomura, K. Kamata, K. Kojima, M. Kozai, K. Sumita, S. Sawada

PO-0666

> Impact of advancing age on treatment and outcomes in anal cancer

PO-0667

**CLINICAL TRACK: GENITOURINARY (PROSTATE INCLUDED)**

> Testosterone variation in intermediate risk prostate cancer treated with androgen blockade and radiotherapy

PO-0668

> Bowel toxicity after IMRT for prostate cancer with a spacer gel - a matched-pair comparison
  M. Pinkawa (Germany), R. Holy, M.D. Piroth, J. Klotz, V. Djukic, S. Schoar, M.J. Eble

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> Caport study: prostate cancer patient profile in the radiation oncology consultation
  X. Maldonado (Spain), J.L. Torrecilla, A. Zapatero, R. Jimenez, J. Lozano, J. Muñoz, A.M. Pérez, I. Rodriguez, C. Ferrer

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> Stereotactic body radiotherapy boost for treatment of organ-confined prostate cancer
  A. Katz (USA), M. Santoro

PO-0671

> Quality of Life in prostate cancer patients: radiotherapy compared to active surveillance
  L. Bellardita (Italy), B. Avuzzi, T. Rancati, D. Villani, S. Catania, T. Magnani, S. Villa, N. Bedini, S. Mortino, R. Valdagni

PO-0672

> Active surveillance for low-risk prostate cancer: practice amongst urologists from four European countries
  A. Azmi (Ireland Republic of), R. Dillon, S. Barghesi, M. Dunne, R. Power, R. Marignol, B.D.P. O’Neill

PO-0673

> Post-op prostate radiotherapy: the case of the missing target, mystery solved
  J.M. Croke (Canada), B. Nyri, Y. Li, L. Arruch, E. Belanger, C. Morash, C. Kayser, K. Malone, S. Malone

PO-0674

> Predictors of acute GU toxicity after prostate cancer radiotherapy: initial results of a prospective study
  C. Cozzarini (Italy), V. Carillo, T. Rancati, A. Muraglia, C. Degli Esposti, G. Girelli, V. Vavassori, S. Villa, R. Valdagni, C. Fiorino

PO-0675

> The impact of late radiation-induced toxicity on health related quality of life in prostate cancer patients
  W. Schaake (The Netherlands), E.M. Wiegman, M. de Groot, H.P. van der Laan, J.A. Langendijk, A.C.M. van den Bergh

PO-0676

> External beam prostate radiotherapy: anorectal toxicity and the influence of endo-rectal balloons

PO-0677

> Hypofractionation with androgen deprivation therapy in prostate cancer: results at 8 years
  M. Yassa (Canada), B. Fortin, M.A. Fortin, C. Lambert, T.V. Nguyen, J.P. Bahary

PO-0678

> Optimal outcome after permanent seed prostate brachytherapy: the TRIFECTA analysis
  A. Tétrault-Laflamme (Canada), T. Zilli, G. Delouya, D. Taussky

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<td>The degree of sick leave in patients with prostate cancer increases during and immediately after radiotherapy</td>
<td>J. Sveistrup (Denmark), P.M. Petersen, O.S. Mortensen, P.M. Rosenschöld, S.A. Engelholm</td>
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<td>Impact of radiation dose on intermediate-risk prostate cancer patients treated with brachytherapy alone or boost</td>
<td>A. Yorozu (Japan), K. Toya, S. Saito, T. Nishiyama, K. Yoshida, N. Koike, A. Takahashi, Y. Yagi, R. Namidome, A. Ashikari</td>
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<td>High risk prostate cancer: does combining nodal IMRT and prostate IGRT significantly impact on nodal dose?</td>
<td>G. Eminowicz (United Kingdom), C. Dean, P. Wells</td>
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  G. Arun (India), V. Sai Subramanian, S. Thirumalai Swamy, A. Anantharaman, M. Kathirvel, K. Ramalingam, K. Kiran Kumar
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- Respiratory motion tracking of external marker and diaphragm in a mini-pig
  S. Park (Korea Republic of), S. Lee, S. Shin, H. Jung, K. Kim, M. Kim, Y. Ji
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- Preliminary evaluation of the uncertainty of respiratory-gated delivery of RapidArc
  D. Kim, W. Chung (Korea Republic of), D. Shin, J. Kang, S. Hong
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- Improved accuracy in 2D/3D registration by using kV-MV image pairs for image guided radiotherapy
  H. Furtado (Austria), M. Figl, M. Stock, D. Georg, W. Birkfellner
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- A tool for management of dose guided radiotherapy (DGRT) for head and neck IMRT patients
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> Comparative analysis of image guidance in two institutions for prostate cancer patients
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- Setup correction protocol for image-guided radiotherapy of the prostate using serrated gold coil markers
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- New concrete designed specifically for neutron shielding

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- Dose modification and recovery strategies for interactive dose shaping
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  E. Petrou (Greece), P. Mavroidis, G.C. Sakellaropoulos, G.C. Nikiforidis, B.K. Lind
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  *S. Clemente (Italy)*, M. Cozzolino, R. Caivano, C. Chiumento, A. Fiorentino, V. Fusco
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> **RapidArc treatment for progressed prostate cancer including concomitant bone metastases targets**
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> **The performance of two common available commercial treatment planning and delivery chains**
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  M. Brambilla (Italy), A.F. Monti, C. Carbonini, M.B. Ferrari, D. Zanni, S. Pasetto, A. Torresin
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> Subjective and objective comparison of different IMRT techniques in head and neck cases
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> Breath hold irradiation technique for left sided breast cancer significantly reduces cardiac radiation exposure
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> Dosimetric plan comparison of multi-field IMRT tonsillar carcinoma treatments
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> Implication of ICRU83 recommendations on dosimetric evaluation of IMRT head and neck plans
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> Relationship between changes in dose distribution of VMAT for prostate cancer and pitch angle setup error
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> Comparison of three SIB-IMRT planning techniques for prostate cancer patients with bilateral hip prostheses
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> Flattening filter free (FFF) beams for breast irradiation

> Impact of bladder distension on organs at risk in 3D intracavitary brachytherapy for gynecological cancer
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> A prospective study of VMAT solutions for unilateral head and neck tumours
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> Fast and deliverable stereotactic VMAT for spine metastases using a simultaneous integrated boost
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> Implementing ICRU Report 83 recommendations in relation to prescription practice in head and neck IMRT treatments
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> Treatment planning of lung tumors using two designs of planning target volume
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> Examination of various treatment techniques for chest wall and lymphatic irradiation
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- Extending treatment field size using VMAT and multiple isocenters
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- Dose distribution of conformal radiotherapy using field-in-field technique in rectal cancer
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- Radiosensitizing effect of electrochemotherapy in fractionated radiation regime in murine tumor models
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- Effect of low dose troglitazone on radiation sensitivity in cervix cancer cells
  W. Park (Korea Republic of), Z. An, X. Liu, H. Song, W. Kim, J. Yu
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- Antitumor effect of combined radio-gene therapy with radio-inducible plasmid encoding interleukin-12 in vivo
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> Beneficial effects of topical melatonin against mitochondrial damage during radiotherapy-induced mucositis
  
  G. Escames (Spain), F. Ortiz, J.C. Dayoub, C. Venegas, L.C. López, D. Acuna-Castroviejo, C. Doerrier, I. Tovar-Martin, M. Martinez-Carrillo

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> Interplay among interleukin expression, parenchyma and inflammatory cells in late radiation-induced lung effects
  
  J. Williams (USA), C. Johnston, E. Hernady, J.N. Finkelstein

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> Lung and heart tissue copper, zinc, iron and selenium levels after irradiation in late period
  
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> Study on ionizing radiation on vertebrate model using wild type and transgenic zebrafish embryos
  

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> Irradiation upregulates CMV promoter of stably transfected cells and tumors in mice
  
  M. Cemazar (Slovenia), U. Kamensek, S. Kranjc, G. Sersa

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> Can radiation-induced chronic-oxidative stress in kidney and liver be prevented by dimethyl sulfoxide?
  
  R. Cosar, S. Eskiocak, V. Yurut-Caloglu, A. Ozen, C. Uzal (Turkey), M. Caloglu, K. Ibis, N. Turan, M. Saynak, S. Parlar

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> Investigation of interleukin 6 as a biomarker of radiation fibrosis in breast cancer
  
  C.B. Westbury (United Kingdom), S. Davies, J. Haviland, L. Gothard, J. Bowen, R. Stratton, S. Short, J.R. Yarnold

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> Implications of the different bystander effect in melanoma skin-cancer cells and umbilical-cord stromal stem cells
  

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> Experimental investigation of cell killing through medium-borne signals in human prostate cancer cell line
  
  S. Sjostedt (Australia), E. Bezak

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> Modelling effects of intercellular communication on cell survival after modulated radiation exposure
  

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> Lung and heart tissue copper, zinc, iron and selenium levels after irradiation in late period
  
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> Irradiation upregulates CMV promoter of stably transfected cells and tumors in mice
  
  M. Cemazar (Slovenia), U. Kamensek, S. Kranjc, G. Sersa

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- Low dose pre-irradiation effect on cell survival in HT29 and MRC5 cell lines
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- Evaluation of an inducible p21 promoter for radiation induced transcriptional targeting
  U. Kamensek (Slovenia), G. Sersa, S. Kranjc, M. Cemazar EP-1585

- Rat model for investigation on the potential modifiers of ionizing radiation induced brain injury

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- Cell survival responses to modulated proton beams delivered by passive scattering and pencil beam scanning

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- No significant influence of GIPC-1 expression on outcome of prostate cancer treated with radiation therapy
  T. Hölscher (Germany), A. Singer, U. Koch, Y. Deuse, M. Baumann, M. Muders, M. Krause EP-1588

- Expression of E-cadherin and vimentin on metastasis formation in head and neck cancer

- IGF-1R expression predicts clinical outcome in locally advanced squamous carcinoma

- Combined effect of hyperthermia and a new HSP70 inhibitor, pifithrin-µ, on prostate cancer
  K. Sekihara (Japan), N. Harashima, N. Uchida, M. Harada EP-1591

- DSB repair and induction of apoptosis in ex vivo irradiated blood lymphocytes of breast cancer patients
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### Thursday 10 May 2012

**WELCOME AND INTRODUCTION**  
08:00 - 08:10 • Room 112

**SYMPOSIUM**  
MODERN BRACHYTHERAPY: ROLE OF NEW IMAGE MODALITIES  
08:10 - 10:40 • Room 112  
**Chair:** J.C.A. Dimopoulos (Greece)  
**Chair:** V. Lowe (USA)

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<td>Modern brachtherapy (BT): role of new imaging modalities</td>
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<td><strong>Speaker:</strong> C. Haie-Meder (France)</td>
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<td>08:25</td>
<td>Modern Brachtherapy: role of functional imaging</td>
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<td><strong>Speaker:</strong> B. Carey (United Kingdom)</td>
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<td>PET imaging in brachtherapy</td>
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<td><strong>Speaker:</strong> V. Lowe (USA)</td>
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<td>09:25</td>
<td>MRI: impact on brachtherapy</td>
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<td><strong>Speaker:</strong> I. Jürgenliemk-Schulz (The Netherlands)</td>
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<td>09:55</td>
<td>Modern brachtherapy: role of ultrasound</td>
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<td><strong>Speaker:</strong> P. Hoskin (United Kingdom)</td>
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<td>10:25</td>
<td>Conclusion - image-guided brachtherapy future and evaluation</td>
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<td><strong>Speaker:</strong> J.C.A. Dimopoulos (Greece)</td>
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**AWARD LECTURE**  
MARIE CURIE MEDAL PRESENTATION  
12:25 - 13:00 • Room 112

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<td>12:30</td>
<td>Brachtherapy in cancer: art and science - accomplishments in over a century</td>
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<td><strong>Speaker:</strong> C. Perez (USA)</td>
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**PANEL SESSION**  
PROSTATE 1: IS THERE A ROLE FOR PRIMARY FOCAL THERAPY?  
14:30 - 15:30 • Room 112  
**Chair:** J. Cosset (France)  
**Chair:** J. Crook (Canada)

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<td>North American experience</td>
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<td><strong>Speaker:</strong> D. Joseph (Australia)</td>
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<td>11:51</td>
<td>ELIOT trials in Milan: results</td>
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<td>12:03</td>
<td>Long term results and on-gonig trials of permanent breast seed implant</td>
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<td>Understanding the pathological features of prostate cancer as a foundation for focal targeted BT</td>
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<td>14:45</td>
<td>Primary focal therapy of prostate cancer: role of diagnostic imaging</td>
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<td><strong>Speaker:</strong> F. Cookley (USA)</td>
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<td>15:00</td>
<td>Technical possibilities of radiotherapy in primary focal therapy of prostate cancer</td>
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15:15 > Non-radiation techniques
Speaker: T. de Reijke (The Netherlands) 17

PANEL SESSION
PHYSICS 1: DOSE TO WATER CALIBRATION
14:30 - 15:30 • Room 111
Chair: J. Venselaar (The Netherlands)
Chair: L. De Werd (USA)
14:30 > 20 EURAMET project: new calibration standards in brachytherapy
Speaker: T. Sander (United Kingdom) 18
14:50 > Brachytherapy calibration standards in the USA
Speaker: L. De Werd (USA) 19
15:10 > Ramifications of dose-rate to water calibrations on clinical dosimetry for photon-emitting brachytherapy sources
Speaker: M. Rivard (USA) 20

PANEL SESSION
GYNAECOLOGY 1: ARE WE DECREASING MORBIDITY WITH IMAGE-GUIDED BRACHYTHERAPY?
16:00 - 17:00 • Room 112
Chair: J.C. Lindegaard (Denmark)
Chair: B. Erickson (USA)
16:00 > Clinical results
Speaker: R. Pötter (Austria) 21
16:20 > DVH parameter analysis
Speaker: K. Tanderup (Denmark) 22
16:40 > What are the pitfalls (integrating organ motion, external beam)
Speaker: B. Erickson (USA) 23

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16:00 > Ten-year outcomes for patients with Gleason 8-10 treated with high dose rate brachytherapy boost
A. Martinez (USA), C. Shah, N. Mohammed, J. Demanes, R. Martinez-Monge, H. Ye, R. Galalae
OC-024

16:10 > High-Dose Rate Afterloading Brachytherapy Using One or Two Fractions for Localised Prostate Cancer
P. Hoskin (United Kingdom), A. Rojas, P. Ostler, R. Hughes, R. Alonzi, L. Bryant, G. Lowe
OC-025

C. Arthur (United Kingdom), J. Malik, R. Swindell, R. Mandal, A. Choudhury, J. Logue, J. Wylie
OC-026

16:30 > A dosimetric analysis of Radiation Therapy Oncology Group (RTOG) 0321: The importance of urethral dose
I. Hsu (USA), D. Hunt, W. Straube, J. Pouliot, A. Cunha, D. Krishnamurthy, H. Sandler
OC-027

16:40 > HDR prostate brachytherapy in anatomically unsuitable cases (<20cc, >50cc, prior TURP)- Uncompromised results
A. Peddada (USA), S. Jennings, R. Biggers, G. Gibbs, E. Cohn, A. Monroe
OC-028

16:50 > Salvage HDR brachytherapy for recurrent prostate cancer after prior definitive radiotherapy: five year outcomes
C.P. Chen (USA), V. Weinberg, K. Shinozara, M. Nash, A. Gottschalk, M. Roach III, I. Hsu
OC-029
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PROFFERED PAPERS

PROSTATE 2
17:05 - 18:35 • Room 112
Chair: D. Todor (USA)
Chair: P. Hoskin (United Kingdom)
17:05 > Results of I-125 strands ± EBRT ± ADT in localized prostate cancer compared to Kattan (2002) nomogram predictions
J. Zimmermann (Germany), P. Zimmermann, C. Moustakis OC-030
17:15 > Comparison of distant metastases for prostate cancer patients treated with prostatectomy, brachytherapy or IMRT
M. Zelefsky (USA), J. Eastham, P. Scardino, X. Pei, M. Kollmeier, B. Cox, Y. Yamada OC-031
17:25 > A dosimetric analysis of prostate cancer treatment: Can SBRT really achieve what HDR brachytherapy can?
D.E. Spratt (USA), M. Scala, G.N. Cohen, L. Happersett, M.J. Zelefsky, M. Kollmeier, B. Cox, Y. Yamada OC-032
17:35 > Comparative cost-effectiveness of salvage brachytherapy vs. hormonal treatment of recurrent prostate cancer
L. Steuten (The Netherlands), M. Piena, M. Peters, M. van Vulpen OC-033
17:45 > A novel method to quantify prostate seed implant plan quality by performing individual seed displacement analysis
Y. Le (USA), R. Alexander, E. Armour, D. Song OC-034
17:55 > CBCT guided intraoperative dynamic dosimetry significantly improves dosimetry for I125 prostate brachytherapy
R. Westendorp (The Netherlands), J. Immerzeel, R. Kattevilder, C. Hoekstra, S. van de Pol, T. Nuver, A. Minken OC-035

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PROFFERED PAPERS

GYNAECOLOGY 1
17:05 - 18:35 • Room 111
Chair: A. Viswanathan (USA)
Chair: J. Guinot (Spain)
17:05 > Outcome of image guided adaptive brachytherapy in locally advanced cervical cancer
J.C. Lindegaard (Denmark), L. Fokdal, S.K. Nielsen, L.L. Røhl, E.M. Pedersen, L.K. Petersen, E.S. Hansen, K. Tanderup OC-039
17:15 > Image guided brachytherapy ends the debate of systematic radical hysterectomy in locally advanced cervical cancer
R. Mazeron (France), J. Gilmore, I. Dumas, J. Champoudry, J. Goulart, B. Vanneste, A. Tailleur, P. Morice, C. Haie-Meder OC-040
17:25 > Pulsed low-dose rate brachytherapy for uterine cervix carcinoma: experience with 245 patients at a single institute
A. Petit (France), L. Thomas, A. Flosset, O. Lasbarelles, E. Stoeckle, A. Chemin, M. Kind, F. Guyon, V. Brouste, J. Pigneux OC-041
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17:35  >  Interstitial brachytherapy versus IMRT in patients with carcinoma cervix unsuitable for ICRT
A.K. Gandhi (India), D.N. Sharma, S. Sharma, D. Manigandan, G.K. Rath, P.K. Julka
OC-042

17:45  >  Treatment dose and volume parameters from 3 years experience of the EMBRACE study
K. Nkiwane (Austria), K. Tanderup, C. Kirisits, J. Lindegaard, M. Federico, R. Pötter, E.M. EMBRACE Study Centers
OC-043

17:55  >  Models for brachytherapy dose de-escalation in low risk locally advanced cervical cancer patients
S. Mohamed (Denmark), K. Tanderup, C. Kirisits, R. Pötter, J.C. Lindegaard
OC-044

18:05  >  Feasibility of ADC mapping in assessment of tumor response in MRI-based HDR brachytherapy for cervical cancer
K. Hosseinzadeh (USA), M.S. Rajagopalan, S. Beriwal
OC-045

18:15  >  High Dose Rate (HDR) intraoperative brachytherapy in the management of recurrent gynecologic malignancies
L.M. Scala (USA), D. Chi, B. Bochner, V. Andikyan, S. Gerst, J. Sandhu, P. Boland, Y. Sonoda, K. Alektiar
OC-046

18:25  >  Clinical outcomes following 3D image-guided brachytherapy for recurrent endometrial cancer
L. Lee (USA), A. Viswanathan
OC-047

Friday 11 May 2012

SYMPOSIUM
RADIOBIOLOGICAL MODELLING IN BRACHYTHERAPY: CLINICAL RELEVANCE?
08:00 - 09:00 • Room 112
Chair: J. Sylvester (USA)
Chair: V. Bourel (Argentina)

08:00  >  Repair half-time
Speaker: S. Bentzen (USA)
48

08:20  >  Different mathematical models and what’s missing
Speaker: V. Bourel (Argentina)
49

08:40  >  Radiobiological changes during the course of treatment
Speaker: A. Haworth (Australia)
50

PROFFERED PAPERS
MISCELLANEOUS
09:05 - 10:05 • Room 112
Chair: J. Gérard (France)
Chair: U. Mahanthshetty (India)

09:05  >  Outcome and toxicity profile after brachytherapy for squamous cell carcinoma of the nasal vestibule.
OC-051

09:15  >  Perioperative vs. postoperative high-dose-rate brachytherapy in squamous cell HNC: A matched-pair analysis
M. Rodríguez-Ruíz (Spain), I. San Miguel, J. Alcalde, N. Montesdeoca, M. Cambeiro, J.M. Lopez-Picazo, A. Olarte, F. Arias, V. Chicata, R. Martinez-Monge
OC-052

09:25  >  From low dose rate to high dose rate brachytherapy in lip carcinoma: same results but less complications
J.L. Guinot (Spain), L. Arribas, M.I. Tortajada, M. Carrascosa, M. Santos, P. Soler, A. Mut, C. Pesudo, M.L. Chust
OC-053
Friday 11 May 2012

09:35  >  Long term outcomes of interstitial brachytherapy in soft tissue sarcomas  
        S. Laskar (India), A. Puri, A. Gulia, B. Rekhi, S. Juvekar,  
        S. Desai, S. Desai, S. Gupta, J. Ghosh, N. Jambhekar  
        SPEAKER: J. Millar (Australia)  
        OC-054

09:45  >  Long-term results of PDR brachytherapy as a boost in squamous cell cancers of the anal canal  
        D.P. Peiffert (France), A. Haddad, L. Rangeard, I. Buchheit,  
        S. Huger, A.S. Baumann, S. Oldrini  
        SPEAKER: Y. Lievens (Belgium)  
        OC-055

09:55  >  Bladder sparing approach with brachytherapy in 1040 patients  
        B. Pieters (The Netherlands), L. Blank, C. Koedooder,  
        R. van Os, M. van de Kar, E. Jansen, E. Gelissen, C. Koning  
        SPEAKER: M. de la Torre (Argentina)  
        OC-056

DEBATE
KEY CONTROVERSIES ON PATIENT SELECTION FOR PARTIAL BREAST IRRADIATION
09:05 - 10:05  •  Room 111
Chair: R. Patel (USA)
Chair: V. Strnad (Germany)
09:05  >  Partial breast irradiation: from the US side  
        SPEAKER: R. Kuske (USA)  
        57

09:35  >  Partial breast irradiation: from the European side  
        SPEAKER: E. Van Limbergen (Belgium)  
        58

PANEL SESSION: 2
A PERSPECTIVE ON HEALTH ECONOMICS IN BRACHYTHERAPY
10:35 - 11:35  •  Room 112
Chair: E. Rosenblatt (Austria)
10:35  >  How can brachytherapy be more systematically used in emerging countries  
        SPEAKER: R. Bilimagga (India)  
        59

10:40  >  North America  
        SPEAKER: D. Beyer (USA)  
        60

Friday 11 May 2012

10:45  >  Australian prostate brachytherapy  
        SPEAKER: J. Millar (Australia)  
        61

10:50  >  Europe  
        SPEAKER: Y. Lievens (Belgium)  
        62

10:55  >  South America  
        SPEAKER: M. de la Torre (Argentina)  
        63

11:00  >  The role of industry in developing cost-effective brachytherapy  
        SPEAKER: E. Rosenblatt (Austria)  
        64

PROFFERED PAPERS
PHYSICS 1
10:35 - 11:35  •  Room 111
Chair: T.P. Hellebust (Norway)
Chair: W. Butler (USA)
10:35  >  Development of a water calorimeter as a primary standard for absorbed dose to water for HDR brachytherapy sources  
        L.A. de Prez (The Netherlands), J.A. de Pooter  
        OC-065

10:40  >  North America  
        SPEAKER: D. Beyer (USA)  
        60

10:45  >  QC of low-energy photon BT sources: recommendations of the Netherlands Commission on Radiation Dosimetry (NCS)  
        A. Rijnders (Belgium), A. Aalbers, M. De Brabandere,  
        C. Koedooder, M.A. Moerland, B. Schaeken, B. Thissen,  
        A. van ‘t Riet, S. Vynckier  
        OC-066

10:55  >  AAPM practice guidelines for COMS eye plaque brachytherapy  
        S.T. Chiu-Tsao, M.A. Astrahan, P.T. Finger, D.S. Followill,  
        A.S. Meigooni, F. Mourtada, M.E. Napolitano, R. Nath,  
        M.J. Rivard and C.S. Melhus (USA), D.W.O. Rogers and  
        R.M. Thomson  
        OC-067

11:05  >  Dosimetric characterization of surface applicators used with brachytherapy sources  
        R. Fulkerston (USA), J. Micka, L. DeWerd  
        OC-068
Friday 11 May 2012

11:15

*** ESTRO Nucletron Brachytherapy Award ***

Bringing in-vivo fiber-coupled brachytherapy dosimetry to the patient

G. Kertzscher (Denmark), C.E. Andersen, J.C. Lindegaard, L.U. Fokdal, M. Paludan, S.K. Nielsen, K. Tanderup

OC-069

11:25

A revolutionary multi-point plastic scintillation detector for in vivo dosimetry in HDR brachytherapy.

F. Therriault-Proulx (USA), L. Archambault, S. Beddar, L. Usmani

OC-070

POSTER HIGHLIGHTS

11:40 - 12:40 • Room 112

Chair: N. Suchowerska (Australia)

Chair: M. de la Torre (Argentina)

11:40

Single nucleotide polymorphisms (SNP’s) associated with late radiation toxicity after prostate brachytherapy


OC-071

11:47

Salvage high dose rate (HDR) interstitial gynecological brachytherapy

N. Patil (Canada), D. D’Souza, E. Wiebe, G. Hajdok, T. Murray, L. Derrah, M. Prefontaine, A. Sugimoto, S. Welch, K. Surry

OC-072

11:54

Urethral dosimetry and toxicity with high dose-rate interstitial brachytherapy

M.S. Rajagopalan (USA), N. Kannan, H. Kim, C. Houser, S. Beriwal

OC-073

12:03

Does partial breast brachytherapy decreases scattered fetal dose in pregnant women?

A. Youssef (USA), T. LaCoute, N. Pahlajani, L. Hughes, Y. Chen, L. An, P. Potrebko, N. Kramer, S. Asbell

OC-074

Friday 11 May 2012

12:10

CT-guided interstitial iodine-125 seed implantation in the treatment of spinal and paraspinal malignancies

C. Liu (China), H.S. Yuan, J.J. Wang, N. Meng, Y.Q. Ma, S.B. Han, C.N. Pang

OC-075

12:17

Postoperative radiation therapy in carcinoma of oral tongue with high dose rate brachytherapy boost - our experience

V. Anand (India), M. Lala, S. Deshpande, P. Patwe, R. Mhatre, V. Kannan

OC-076

12:24

Feasibility of convex optimisation with radiobiological models for prostate HDR-brachytherapy

F. Steenbergen (The Netherlands), D. den Hertog, B. Gorissen, A.L. Hoffmann

OC-077

12:31

Characterization of a new Ce3+ doped scintillation detector for in vivo dosimetry in high dose rate brachytherapy

M. Borroni (Italy), M. Carrara, C. Cavatorta, G. Gamarini, E. Pignoli, A. Vedda

OC-078

PANEL SESSION

PROSTATE 2: SALVAGE TREATMENT AFTER BRACHYTHERAPY FAILURE

14:00 - 15:00 • Room 112

Chair: M. Zelefsky (USA)

Chair: G. Kovács (Germany)

14:00

Re-implantation

Speaker: M. Roach (USA)

79

14:30

Radical salvage prostatectomy for radiorecurrent prostate cancer

Speaker: A. Heldenreich (Germany)

80
Friday 11 May 2012

PROFFERED PAPERS
GYNAECOLOGY 2
14:00 - 15:00 • Room 111
Chair: F. Patel (India)
Chair: L. Linares (USA)

14:00  >  A multicentre comparison of inter- and intra-fractional organ movement in cervix cancer BT and its dosimetric impact
N. Nesvacil (Austria), K. Tanderup, T. Paulsen-Hellebust,
A. De Leeuw, C. Anderson, S. Mohamed, R. Pötter, C. Kirisits

OC-081

14:10  >  Preplanning improves feasibility of intracavitary/interstitial brachytherapy in cervical cancer.
L. Fokdal (Denmark), K. Tanderup, S.B. Hokland, L. Rahl,
E.M. Pedersen, S.K. Nielsen, J.C. Lindegaard

OC-082

14:20  >  Spatial dosimetric sensitivity analysis of contouring uncertainties in GYN 3D-based brachytherapy
T.P. Hellebust (Norway), P. Petric, K. Tanderup, D. Berger,
E. Fidarova, R. Pötter, C. Haie-Meder, E. Malinen

OC-083

14:30  >  A novel method to assess organ motion during 3D image-guided pulsed dose rate cervix cancer brachytherapy
J. Champoudry (France), J. Gilmore, I. Dumas, J. Goulart,
A.S. Oberlander, R. Mazeron, I. Diallo, D. Lefkopoulos,
C. Haie-Meder

OC-084

14:40  >  Deformation analysis of PDR brachytherapy in cervical carcinoma
J. Cuartero (Canada), M.L. Yap, S. Oh, M. Morgia, Y.B. Cho,
J. Xie, W. Levin, L. Manchul, A. Fyles, M. Milosevic

OC-085

14:40  >  Inter-fraction uncertainties of OARs metrics in multi-fraction gynecologic interstitial brachytherapy
M. Bhagwat, A. Damato (USA), A. Kovacs, K. Townamchai,
R. Cormack, A. Viswanathan

OC-086

Friday 11 May 2012

PROFFERED PAPERS
BREAST 1
15:05 - 16:05 • Room 112
Chair: J. Pignol (Canada)
Chair: J.M. Hannoun-Levi (France)

15:05  >  Breast-conserving therapy with partial or whole breast RT: 10-year results of the Budapest randomized trial
C. Polgár (Hungary), T. Major, J. Fodor, Z. Sulyok,
Z. Takacsi-Nagy, G. Nemeth, M. Kasler

OC-087

15:15  >  First clinical results of the GEC-ESTRO breast WG Phase III multicentric APBI trial
V. Strnad (Germany), O.J. Ott, G. Hildebrandt, R. Pötter,
R. Fietkau, J. Lyczek, W. Uter, T. Major, M. Lotter, C. Polgar

OC-088

15:25  >  Partial breast accelerated radiotherapy with multicatheter HDR brachytherapy
C. Monti (Brazil), E. Marussi, R. Torresan, F. Brandão,
N. Kawakami, M.C. Scoz

OC-089

15:35  >  Efficacy of young patients treated with accelerated partial breast irradiation for early-stage breast cancer
P.Y. Chen (USA), C. Shah, J.B. Wilkinson, C.K. Mitchell,
M. Lyden, F.A. Vicini

OC-090

15:45  >  Long term outcomes and recurrence pattern following accelerated partial breast irradiation using Mammosite
A. Ravi (USA), C. Sison, A. Osian, S. Lee, D. Nori

OC-091

15:55  >  Impact of margin status after APBI: an analysis of the American Society of Breast Surgeons MammoSite® Registry Trial
J.B. Wilkinson (USA), C. Shah, M. Keisch, P. Beitsch, D. Arthur,
M. Lyden, F.A. Vicini

OC-092
Friday 11 May 2012

**Panel Session**

**Physics 2: Uncertainties in Brachytherapy and How to Report Them?**

- **Chair:** F. Siebert (Germany)
- **Chair:** M. Rivard (USA)

- **15:05**
  - TG-138 report: uncertainties in photon emitting brachytherapy source dosimetry
    - **Speaker:** B. Thomadsen (USA)
    - **Abs. Number:** 93

- **15:25**
  - Systematic overview and reporting guidelines for uncertainties in clinical brachytherapy
    - **Speaker:** C. Kirisits (Austria)
    - **Abs. Number:** 94

- **15:45**
  - Uncertainties in image guided brachytherapy: economical and logistical aspects
    - **Speaker:** J.A. Polo Rubio (Spain)
    - **Abs. Number:** 95

**Symposium**

**How to Improve Safety in Brachytherapy? Practical Examples**

- **Chair:** G. Morton (Canada)
- **Chair:** C. Kirisits (Austria)

- **16:35**
  - Is high safety in brachytherapy a result of advanced techniques and advanced imaging?
    - **Speaker:** D. Baltas (Germany)
    - **Abs. Number:** 96

- **17:05**
  - Strategies to prevent errors in brachytherapy: learning from our mistakes
    - **Speaker:** R. Lee (USA)
    - **Abs. Number:** 97

Saturday 12 May 2012

**Symposium**

**New Opportunities with Robotic, Endoscopic and Radiological Interventions**

- **Chair:** J. Demanes (USA)
- **Chair:** M. Moerland (The Netherlands)

- **08:00**
  - Robot assisted mesh brachytherapy after sublobar resection for early stage lung cancer
    - **Speaker:** D. Khuntia (USA)
    - **Abs. Number:** 98

- **08:20**
  - Rigid rectoscopy to improve radiation targeting and individualise management of rectal cancer
    - **Speaker:** J. Gérard (France)
    - **Abs. Number:** 99

- **08:40**
  - Radiological intervention
    - **Speaker:** G. Gademann (Germany)
    - **Abs. Number:** 100

**Symposium**

**Role of IAEA and UICC in Brachytherapy Training**

- **Chair:** B. Prestidge (USA)

- **09:05**
  - Brachytherapy: the IAEA vision and policy
    - **Speaker:** E. Fidarova (Austria)
    - **Abs. Number:** 101

- **09:35**
  - UICC: role of radiation therapy and brachytherapy in improving cancer outcomes in the world
    - **Speaker:** M. Gospodarowicz (Canada)
    - **Abs. Number:** 102

**Symposium**

**Skin Brachytherapy**

- **Chair:** Z. Ouhib (USA)
- **Chair:** R. Bilimagga (India)

- **09:05**
  - What are the best indications for brachytherapy in non-melanoma skin cancers?
    - **Speaker:** M. Delannes (France)
    - **Abs. Number:** 103
Saturday 12 May 2012

09:25  >  Physics requirements for skin brachytherapy
   **Speaker:** J. Perez-Calatayud (Spain)  
   **Abs. Number:** 104

09:45  >  Skin brachytherapy from the dermatologist side
   **Speaker:** J. Strasswimmer (USA)  
   **Abs. Number:** 105

**PANEL SESSION**

**GYNAECOLOGY 2: EMERGING EVIDENCE FOR IMAGE-BASED BRACHYTHERAPY IN CERVICAL CANCER**

10:35 - 11:35  • Room 112
   **Chair:** R. Pötter (Austria)
   **Speaker:** P. Eifel (USA)

10:35  >  Global perspective on gynecologic brachytherapy: challenges and developments
   **Speaker:** A. Viswanathan (USA)  
   **Abs. Number:** 106

10:55  >  Multicenter studies with image guided brachytherapy in cervical cancer
   **Speaker:** J.C. Lindegaard (Denmark)  
   **Abs. Number:** 107

11:15  >  Upcoming [CRU/GEC ESTRO recommendations for brachytherapy in cancer of the cervix (1)]
   **Speaker:** R. Pötter (Austria)  
   **Abs. Number:** 108

11:25  >  Upcoming [CRU/GEC ESTRO recommendations for brachytherapy in cancer of the cervix (2)]
   **Speaker:** C. Kiritsis (Austria)  
   **Abs. Number:** 109

Saturday 12 May 2012

**PROFFERED PAPERS**

**PHYSICS 2**

10:35 - 11:35  • Room 111
   **Chair:** Á. Carlsson Tedgren (Sweden)
   **Speaker:** R. Fulkerson (USA)

10:35  >  Functional MRI guided HDR prostate brachytherapy tumour boost: a feasibility study
   **J. Mason (United Kingdom), B. Al-Qaisieh, P. Bownes, D. Wilson, D.L. Buckley, D. Thwaites, B. Carey, A. Henry**  
   **Abs. Number:** OC-110

10:45  >  Improved applicator visualisation for MRI-guided brachytherapy of cervix
   **G.P. Liney (United Kingdom), C.J. Horsfield, T.J. Murray, A.W. Beavis**  
   **Abs. Number:** OC-111

10:55  >  Does inter-fraction catheter motion affect HR-CTV coverage in gynecologic interstitial brachytherapy?
   **A. Damato (USA), R. Cormack, A. Viswanathan**  
   **Abs. Number:** OC-112

11:05  >  Dynamic Modulated BrachyTherapy (DMBT): concept, design, and simulations
   **W. Song (USA), M. Webster, D. Han, J. Einck, D. Scanderbeg, T. Vuong, S. Devic**  
   **Abs. Number:** OC-113

11:15  >  Robot-guided delivery of brachytherapy needles along non-parallel paths to avoid penile bulb puncture
   **Abs. Number:** OC-114

11:25  >  Critical analysis of FMEA implementation for brachytherapy at two institutions
   **D. Scanderbeg (USA), S. Richardson, T. Pawlicki**  
   **Abs. Number:** OC-115
### Saturday 12 May 2012

#### PANEL SESSION
**PHYSICS 3: THE ADVANTAGES AND CRITICALITIES OF NEW DOSE CALCULATION ALGORITHMS**  
11:40 - 12:40 • Room 112  
**Chair:** J. Perez-Calatayud (Spain)  
**Chair:** F. Verhaegen (The Netherlands)

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<th>Time</th>
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<th>Speaker(s)</th>
<th>Abs. Number</th>
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<tbody>
<tr>
<td>11:40</td>
<td>Model-based dose calculation techniques in brachytherapy</td>
<td>L. Beaulieu (Canada)</td>
<td>116</td>
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<tr>
<td>12:00</td>
<td>Is the future of brachytherapy model-based?</td>
<td>P. Papagiannis (Greece)</td>
<td>117</td>
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<tr>
<td>12:20</td>
<td>The advantages and criticalities of new dose calculation algorithms: when prescription doses should change?</td>
<td>J. Guinot (Spain)</td>
<td>118</td>
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#### POSTER DISCUSSION
**SESSION 1**  
11:40 - 12:40 • Room 111  
**Chair:** B. Pieters (The Netherlands)  
**Chair:** G. Bucci (Australia)

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<tr>
<td>11:40</td>
<td>Real-time source position verification for MR-guided single fraction HDR prostate brachytherapy.</td>
<td>M.A. Moerland (The Netherlands), H. de Leeuw, M. van Vulpen, C.J.G. Bakker, P.R. Seevinck</td>
<td>PD-119</td>
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<tr>
<td>11:50</td>
<td>Comprehensive dosimetric evaluation of a small strut-based APBI device: a retrospective single-institution study</td>
<td>S. Morcovescu (USA), J.F.M. Morton, K. Perry</td>
<td>PD-121</td>
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### Saturday 12 May 2012

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<tr>
<td>11:55</td>
<td>Statin use not associated with improved outcomes in patients treated with brachytherapy for prostate cancer</td>
<td>J. Cuaron (USA), X. Pei, G. Cohen, B. Cox, Y. Yamada, M. Zelefsky, M. Kollmeier</td>
<td>PD-122</td>
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<tr>
<td>12:00</td>
<td>Decline in acute urinary toxicity: a long term study in 2011 patients with prostate brachytherapy</td>
<td>E.K. Chan (Canada), M. Keyes, T. Pickles, V. Lapointe, I. Spadinger, M. McKenzie, W.J. Morris</td>
<td>PD-123</td>
</tr>
<tr>
<td>12:45</td>
<td>Potential benefit of MRI-guided brachytherapy for esophageal cancer</td>
<td>I.M. Lips (The Netherlands), F.M. Lever, O. Reerink, M. van Vulpen, M.A. Moerland</td>
<td>PD-126</td>
</tr>
<tr>
<td>12:55</td>
<td>Dose contribution to involved pelvic nodes with 3D brachytherapy for cervix cancer; comparison of two cancer centers</td>
<td>W. van den Bos (The Netherlands), L. Velem, S. Beriwai, A.A.C. de Leeuw, I.M. Jürgenliemk-Schulz</td>
<td>PD-128</td>
</tr>
</tbody>
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Saturday 12 May 2012

**Panel Session**

_Gynaecology 3: Optimal Adjuvant Treatment for Intermediate Risk Endometrial Cancer_

14:00 - 15:00 • Room 112

Chair: A. Poitevin (Mexico)
Chair: C. Creutzberg (The Netherlands)

14:00 > Improving individualized cancer care with a nomogram following surgery

 Speaker: K. Alektiar (USA)

14:30 > Vaginal brachytherapy should be the standard adjuvant treatment

 Speaker: C. Creutzberg (The Netherlands)

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**Proffered Papers**

_Breast 2_

14:00 - 15:00 • Room 111

Chair: D. Arthur (USA)
Chair: C. Hennequin (France)

14:00 > Breast cancer: external beam radiotherapy and interstitial boost application - an analysis of 1065 patients


14:10 > Excellent cosmesis after APBI: does dose to the dermal volume provide a better predictive constraint than skin Dmax?


14:20 > Perioperative high dose rate interstitial brachytherapy boost for patients with early breast cancer

 Speaker: D.N. Sharma (India), S.V.S. Deo, G.K. Rath, N.K. Shukla, R. Madan, S. Sharma, P.K. Julka

14:30 > Comparison of dose gradient within the PT Eval as a function of optimization method and applicator used in APBI


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Tuesday 15 May 2012

**Panel Session**

_Gynaecology 3: Optimal Adjuvant Treatment for Intermediate Risk Endometrial Cancer_

14:00 - 15:00 • Room 112

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**Proffered Papers**

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14:30 > Comparison of dose gradient within the PT Eval as a function of optimization method and applicator used in APBI


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Saturday 12 May 2012

15:15  >  Influence of high atomic number elements in human tissue in dosimetry for low energy photon brachytherapy
         S.A. White (The Netherlands), G. Landry, F. Van Gils,
         F.A. Verhaegen, B. Reniers

15:25  >  Quantifying the inter-source attenuation in a dual-source HDR/PDR afterloader treatment unit
         M. Plamondon (Canada), L. Beaulieu

15:35  >  Dosimetry for HDR head and neck brachytherapy patients using a grid-based Boltzmann solver
         F.A. Siebert (Germany), S. Wolf, G. Kovacs

15:45  >  Comparison of different fractionation schedules in HDR brachytherapy as monotherapy for low-risk prostate cancer
         P. Mavroidis (Sweden), N. Milickovic, N. Tselis, Z. Katsilieri,
         V. Kefala, N. Zamboglou, D. Baltas

15:55  >  Dosimetric and radiobiological evaluation of manually and inversely optimized brachytherapy treatment planning
         T. Palmqvist (Sweden), A.D. Wanderás, A.B.L. Marthinsen,
         M. Sundset, I. Langdal, S. Danielsen, I. Toma-Dasu

SYMPOSIUM
ONE HUNDRED YEARS OF PROSTATE BRACHYTHERAPY
16:10 - 17:10  •  Room 112

16:10  >  Introduction
         J. Crook (Canada)

16:20  >  One hundred years of prostate brachytherapy
         Speaker: J. Aronowitz (USA)
POSTERS

POSTER: PROSTATE

＞ Sector analysis of I-125 prostate implants provides an effective method in comparing pre and post-implant dosimetry
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