LIASON REPORT
8th BIENNIAL ESTRO MEETING ON
PHYSICS AND RADIATION TECHNOLOGY
FOR CLINICAL RADIOThERAPY

I. Meeting date and location: September 23 – 29, 2005, Lisbon, Portugal

II. General Aspects

ESTRO meeting this year began with Image a workshop on guided Radiotherapy. It was organized in the following subsections

• Rationale
• Clinical experience
• Imaging and treatment planning
• Initial experience
• CT-based imaging and delivery
• Clinical implementation
• Image-guided brachytherapy
• The future of image-guided radiotherapy

Scientific program began on Monday September 25. There were up-to three parallel sessions at some occasions. These were organized under the following subcategories:

• Teaching lectures (Refresher courses)
• Symposia and proffered papers
• Posters
• Awards session

In general there were two parallel sessions to cover symposia and proffered papers. Posters could be viewed throughout the meeting. The total attendance was about 1100. About 500 exhibitors are included in this total. There were about 77 companies that participated in technical exhibits. Main topics of the meeting and subtopics are given below:

A. Teaching lectures
BT in prostate cancer Monitor unit calculations
Risk management in radiation therapy: what have we learned?
Imaging for treatment planning
RT networking
MedAustron: The Austrian Ion
Treatment margins
Dosimetry protocol in BT (TG-43)
Dose escalation radiotherapy of prostate cancer
Radiobiological treatment planning
Clinical trial design
Defining national strategies in RT

B. Symposia:
Treatment verification
Monte Carlo calculation
Improvements in techniques
In vivo dosimetry for breast RT
Proffered papers
Radiobiology & clinical outcome
Brachytherapy Breast & radiobiology
Cost-benefit of QA in RT
Stereotactic therapy
Side effect management
Functional and biological
Tele Oncology & Networking
Proton and ion therapy
Imaging for RT planning
Gated radiotherapy
Basic & novel dosimetical systems
IMRT of the pelvis
IMRT
Image guided radiotherapy
Patient positioning in RT
Radiobiological & mathematical modeling
Dosimetric methods
RT departments of the future

C. Satellite Symposium
Accuray
Elekta
Kodak
Brainlab

D. Proffered Papers
Dose computation
Tumor control & normal tissue complications
Towards a unified European Society of Cancer Professionals
Imaging for RT
Hadron therapy
Quality Control
Geometric Accuracies
RT Physics & Dosimetry
Practical departmental aspects
Gating in radiotherapy
IMRT (combined session)
Novel technologies
Lung
Quality assurance
Conformal RT

E. Award Lectures
Varian Service Award
Jack Fowler – University of Wisconsin
Honorary physicist

III. Major Sessions
A summary of daily schedules of the meeting is given in Appendix A.

IV. Committees

ESTRO PHYSICS COMMITTEE

Chairperson  D. Thwaites (UK)
Committee members
W. Bulski (PL)                J. Malicki (PL)
B. Davis (CH)                 B. McClean (IRL)
M.c. Lopes (P)                A. McKenzi (UK)
T. Edualdo ((E)               T. Kněžůs (S)
R.C. Fiorino (I)             H. Nyström (S)
G. Gagilardi (S)             D.R. Olsen (N)
H. Jarvinen (FI)             W. Schlegal (D)

SCIENTIFIC COMMITTEE OF THE MEETING

Chairperson  D. R Olsen (N)
A listing of the committees and members is given in Appendix B.

V. Role of the Physics Committee

The Board of European Society appoints the Physics Committee for Therapeutic Radiology and Oncology (ESTRO). The primary purpose of the Committee is:

- to advise the Board on questions related to clinical physics;
- to improve the quality of physics in radiotherapy;
- to organize scientific meetings and working parties under the auspices of the Board, e.g., the Biennial Meeting on Physics in Clinical Radiotherapy;
- to advise on the physics program at ESTRO meetings; and,
- to cooperate with other organizations on clinical physics.
The Physics members were very much interested to have the AAPM members participate in the activities of ESTRO and were equally interested in participating in the activities of AAPM. They wish to continue the collaboration with the AAPM.

Overall, ESTRO continues to organize highly successful meeting with emphasis on teaching and significant scientific and technical content.

VI. Physics Committee Issues

1. Develop, structure and operation of the Physics committee
   - links to wider ESTRO structures
   - membership... representation..., nominations, replacements, term...
   - horizon scanning (meetings, courses, etc.)
   - horizon scanning (identify developments, topics ... for pro-active guidance/documents?)
   - links to other organisations (AAPM, EFOMP, etc.)... and IAEA, EORTC, etc
   - links to radiobiology comm
   - links to RTT comm.
   - links to brachytherapy committee
   - links to Physics Board members...
   - communication, meetings...

2. Members to take on specific areas of interest - set up 'virtual' support groups, bring in younger members

3. Need for Vice-chair or Secretary to committee?

4. Younger member involvement generally (link to wider ESTRO initiatives + specific Physics considerations...)

5. Strategies/activities for the future?

6. Physics involvement on ESTRO communication and information platforms/ groups/ committees, e.g. communication group, website group (+ website content/monitoring), newsletter input...

7. General ICT issues at ESTRO ...

8. Physics (+ other?) booklets... procedures/responsibilities?

9. Meetings
   - Leipzig scientific committee (brief report); pre-meeting w/shops?
   - Physics meeting in 2007 (brief report)
   - IAEA QA meeting
   - 2006 World Congress
10. Education...
- input to education developments...
- curriculum review; CPD; recognition of qualifications (+EFOMP)

10a. Physics or physics-content ESTRO course reports
- Basic Physics course; Dose determination; IMRT; IGRT; Imaging
  (+ extra editions in E Europe, 2005, 2006; + future plans)

10b. ESTRO Course content
- Liaison between course directors and physics representatives on Education Committee
- Need to ensure overlap only where necessary
- Need to include new topics as they arise in existing courses
- Need to ensure new topics for courses are input and pushed (e.g. possible 3D TPS course)
- Risk management?

10c. Wider involvement of ESTRO in teaching courses... outside Europe activities (ex-ISRO...?)

11. Physics or physics-involved ESTRO working parties or with ESTRO nominees
- QASIMODO
- Small field dosimetry; IMRT QA, 3DTPS etc
- BRAPHYQS
- Brachytherapy calibration standards?
- Clinical Audit working party (IAEA; ESTRO)
- ROSIS
- ... others... (e.g. ASTRO connectivity WP...)
  (...) ESTRO infrastructure, workload, satellite centres, protons/light ions,
  IT/grid developments, connectivity, ... etc.?)
- new areas/topics... scientific, professional, multi-disciplinary... ?
- input to ESTRO^- EU discussions on new areas

12. QA in ESTRO
- ESTRO-EQUAL... structure, scientific input, promotion...
- IMRT QA
- Clinical trial QA
- Clinical audit development (guidelines for the interpretation of 97/43 for RT in Europe)
- Eur 97/43 implementation follow-up?

13. Reports on areas of mutual interest from
- EFOMP
- AAPM
- IAEA
- EORTC
14. Developments in relationships between ESTRO and other European cancer societies

15. Varian, JF, etc. awards… nominations…

VII. Future Meetings

ECCO13, The European Cancer Conference (ESTRO 24)
Paris (France)
Sun 30-Oct-2005 - Thu 03-Nov-2005
Info: www.fecs.be

ESTRO25
Leipzig (Germany)
Sun 08-Oct-2006 - Thu 12-Oct-2006

VIII. Future Teaching Courses

Evidence-Based Radiation Oncology: Methodological Basis and Clinical Application
Dubrovnik (Croatia)
Sun 13-Nov-2005 - Fri 18-Nov-2005

Physics for Clinical Radiotherapy
Bydgoszcz (Poland)
Sun 20-Nov-2005 - Thu 24-Nov-2005

Multidisciplinary Teaching Course on Prostate Cancer
Ghent (Belgium)
Sun 12-Feb-2006 - Thu 16-Feb-2006

ESTRO Pre-Meeting Workshop on Radiototherapy in Early Breast Cancer at the 5th European Breast Cancer Conference - March 21-25, 2006 (EBCC)
Nice (France)
Radiotherapy Treatment Planning Principles and Practice
Dublin (Ireland)
Sun 26-Mar-2006 - Thu 30-Mar-2006

Modern Brachytherapy Techniques
Praha (Czech Republic)
Sun 26-Mar-2006 - Thu 30-Mar-2006

Molecular Oncology for the Radiation Oncologist
Granada (Spain)
Sun 30-Apr-2006 - Thu 04-May-2006

Dose Determination in Radiotherapy: Beam Characterisation, Dose Calculation and Dose Verification
Izmir (Turkey)  
Sun 07-May-2006 - Thu 11-May-2006

Basic Clinical Radiobiology (extra edition)  
Ljubljana (Slovenia)  
Sun 21-May-2006 - Thu 25-May-2006

Physics for Clinical Radiotherapy (Russian edition)  
Moscow (Russian Federation)  
Sun 28-May-2006 - Thu 01-Jun-2006

Imaging for Target Volume Determination in Athens  
Athens (Greece)  

IMRT and Other Conformal Techniques in Practice  
Copenhagen (Denmark)  

Brachytherapy for Prostate Cancer  
Barcelona (Spain)  

Brachytherapy in Gynaecological Malignancies  
Vienna (Austria)  
Thu 31-Aug-2006 - Fri 01-Sep-2006

Physics for Clinical Radiotherapy  
Innsbruck (Austria)  
Sun 03-Sep-2006 - Thu 07-Sep-2006

Basic Clinical Radiobiology  
Lisbon (Portugal)  
Sun 17-Sep-2006 - Thu 21-Sep-2006

Evidence-Based radiation Oncology: Methodological Basis and Clinical Application  
Giardini Naxos (Italy-Sicily)  

IMRT and Other Conformal Techniques (extra edition)  
Gliwice (Poland)  
Sun 19-Nov-2006 - Thu 23-Nov-2006

Image-guided Radiotherapy (IGRT)  
Brussels (Belgium)  
Sun 03-Dec-2006 - Thu 07-Dec-2006
IX. Overall Remarks

Estro physics is an extremely well organized group with focus on teaching, research and clinical applications of modern radiobiological, imaging and treatment delivery tools. Over the last 5 years it has doubled its membership of physicists and corporate personnel. It is to some extent due to their aggressive organization of teaching courses in addition to the annual meeting. Every year there are fifteen teaching courses around Europe and developing countries. AAPM should consider organizing similar courses in different regions or state on at, if not monthly, least quarterly basis.

Respectfully submitted by

Bhudatt Paliwal, PhD
Liason, ESTRO
Alternate: Wolfgang Tome, PhD
### Saturday, September 24

<table>
<thead>
<tr>
<th>Time</th>
<th>Auditorium I</th>
<th>Sunday, September 25</th>
<th>Auditorium I</th>
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<tbody>
<tr>
<td>09.00-10.30</td>
<td>Rationale</td>
<td>09.00-10.30</td>
<td>Clinical experience</td>
</tr>
<tr>
<td>10.30-11.00</td>
<td>Coffee</td>
<td>10.30-11.00</td>
<td>Coffee</td>
</tr>
<tr>
<td>11.00-13.00</td>
<td>Imaging and treatment planning</td>
<td>11.00-13.00</td>
<td>Initial experience</td>
</tr>
<tr>
<td>13.00-14.00</td>
<td>Lunch</td>
<td>13.00-14.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14.00-15.30</td>
<td>CT-based imaging and delivery</td>
<td>14.00-15.45</td>
<td>Clinical implementation</td>
</tr>
<tr>
<td>15.30-16.00</td>
<td>Coffee</td>
<td>15.45-16.15</td>
<td>Coffee/Tea</td>
</tr>
<tr>
<td>16.00-17.30</td>
<td>Image-guided brachytherapy</td>
<td>16.15-17.30</td>
<td>The future of image-guided radiotherapy</td>
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<tr>
<td>17.30</td>
<td></td>
<td>18.00</td>
<td>Closing of the meeting</td>
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<td></td>
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<td>Opening Ceremony</td>
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### Monday, September 26, 2005

### Appendix A

8th Biennial ESTRO Meeting on Physics and Radiation Technology for Clinical Radiotherapy
### Wednesday, September 28, 2005

<table>
<thead>
<tr>
<th>Time</th>
<th>Auditorium I</th>
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<tbody>
<tr>
<td>08.00 - 08.50</td>
<td>Treatment margins</td>
<td>Dosimetry protocol in BT (TG-43)</td>
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<tr>
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<td>Symposia</td>
<td>Dose escalation radiotherapy of prostate cancer</td>
</tr>
<tr>
<td>09.00 - 10.30</td>
<td>Gated radiotherapy</td>
<td>Basic &amp; novel dosimetric systems</td>
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<tr>
<td>10.30 - 11.00</td>
<td>Coffee break</td>
<td>IMRT of the pelvis</td>
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<tr>
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<td>Proffered papers</td>
<td>Dose computation II</td>
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<tr>
<td>11.00 - 12.30</td>
<td>Gating in radiotherapy</td>
<td>IMRT (combined session)</td>
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<tr>
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<td>Lunch</td>
<td>Satellite Symposium: Brainlab</td>
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<tr>
<td>12.30 - 14.00</td>
<td>IMRT</td>
<td>Image guided radiotherapy</td>
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<tr>
<td></td>
<td>Symposia</td>
<td>Patient positioning in RT</td>
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<tr>
<td>14.00 - 15.00</td>
<td>Coffee</td>
<td>Lung</td>
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<tr>
<td></td>
<td>Proffered papers</td>
<td>IMRT II</td>
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<tr>
<td>15.30 - 17.00</td>
<td>IMRT II</td>
<td>Novel technologies</td>
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<td></td>
<td>Satellite Symposium: Brainlab</td>
<td>ESTRO Dinner</td>
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<td>Conference/Award lecture</td>
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### Thursday, September 29, 2005

<table>
<thead>
<tr>
<th>Time</th>
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<td>Defining national strategies in RT</td>
</tr>
<tr>
<td>09.00 - 10.30</td>
<td>Radiobiological &amp; mathematical modeling</td>
<td>Dosimetric methods</td>
</tr>
<tr>
<td>10.30 - 11.00</td>
<td>Coffee break</td>
<td>RT departments of the future</td>
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<tr>
<td></td>
<td>Proffered papers</td>
<td>Imaging II</td>
</tr>
<tr>
<td>11.00 - 12.30</td>
<td>Quality assurance</td>
<td>Conformal RT</td>
</tr>
</tbody>
</table>
Appendix B

COMMITTEES

ESTRO PHYSICS COMMITTEE

Chairperson  D. Thwaites (UK)
Committee members
W. Bulski (PL)  J. Malicki (PL)
B. Davis (CH)  B. McClean (IRL)
M.C. Lopes (P)  A. McKenzie (UK)
T. Eudaido (E)  T. Knöös (S)
C. Fiorino (I)  H. Nyström (DK)
G. Gagliardi (S)  D.R. Olsen (N)
H. Järvinen (FI)  W. Schlegel (D)

ESTRO RTT COMMITTEE

Chairperson  M. Coffey (IRL)
Vice chairperson  A. Osztavics (A)
Committee members
G. Brusadin (I)  J. Degarfält (S)
V. Cheval (F)  L. van der Vight (NL)
J. Cunningham (IRL)  G. Vandevelde (B)

SCIENTIFIC COMMITTEE OF THE MEETING

Chairperson  D.R. Olsen (N)
Committee members
A. Bridier (F)  A. McKenzie (UK)
V. Cheval (F)  B. Mijnheer (NL)
M. Coffey (IRL)  A. Osztavics (A)
J. Cunningham (IRL)  M. Ramalho (P)
M. Eiras (P)  F. Sanchez-Doblado (E)
G. Gagliardi (S)  W. Schlegel (D)
T. Knöös (S)  N. Teixeira (P)
T. Lomax (CH)  K. Theodorou (GR)
M.C. Lopes (P)  D. Thwaites (UK)
J. Malicki (PL)  L. van der Vight (NL)
B. McClean (IRL)  G. Vandevelde (B)

LOCAL ORGANISING COMMITTEE

Chairpersons  M. Ramalho (Lisboa)
N. Teixeira (Lisboa)
Committee members
C. Alves (Coimbra)  M.C. Oliveira (Lisboa)
I. Diegues (Lisboa)  R. Pirraco (Porto)
M.E. Fernandes (Porto)  F. Ponte (Porto)
J. Faria (Lisboa)  A. Reis Monteiro (Porto)
P. Ferreira (Lisboa)  F. Ribeiro (Coimbra)
M. Joao Rosa (Lisboa)  P.C. Simões (Coimbra)
M.C. Lopes (Coimbra)  F. Vinagre (Coimbra)
F. Marques (Lisboa)