

*Biography of Professor Harry Bartelink *)*

Harry Bartelink, Oldenzaal 20 May 1946, is a Dutch radiation oncologist and professor in clinical experimental radiotherapy. He was head of the Department of Radiotherapy of the Netherlands Cancer Institute (NKI) from 1985 to 2007. He is married and has four children.

Bartelink studied medicine at the University of Nijmegen with the intention of working in the tropics and specialising in tropical medicine. In 1970, he completes his study and obtains his medical qualification but at that time his preferred work terrain, Uganda, is in a state of dangerous instability and he decides to change his plans. Under the influence of the radiation oncologist Dr. D. Miete, one of the founding members of the Arnhem Radiotherapy Institute, Bartelink chooses for radiation oncology.

From 1973 to 1977, Bartelink works as a resident under Professor Klaas Breur in the radiation therapy department of the NKI in Amsterdam and is trained to become a radiation oncologist. During this period he gains work experience at the University of Nijmegen (radiology, 1973), at the Wilhelmina Gasthuis Amsterdam (radiation oncology, 1974) and at the Rotterdam Radiotherapy Institute (1976). After his specialist registration he obtains a permanent position as radiation oncologist at the NKI.

Harry Bartelink is a passionate researcher and he is greatly involved in the development of improved irradiation techniques. Beside his tasks as radiation oncologist, he is enabled to further specialize and he works for some time at leading institutes such as the Mayo Clinic in Rochester, USA (1997), Institute Gustave Roussy in Villejuif, France (1978), and Stanford University in Palo Alto, USA (1982). In 1980 he takes his PhD at the University of Amsterdam (UvA) under Professor Breur. His thesis is titled: "Lymphkliermetastasen van het plaveiselcelcarcinoom in het hoofd-hals gebied" (Lymph node metastases from squamous cell carcinoma in the head and neck region). In 1985, he spends a year as "Visiting Professor" at Stanford University.

The succession of Professor Breur.

After Dr. Breur leaves due to illness in 1980, Harry Bartelink plays a central role in the coordination of research in the Department of Radiotherapy. In 1985 he is appointed head of the department with particular focus on research, at the side of Jan Bangert who is head of clinical and general affairs in the department. In 1989, Bangert retires and Bartelink takes over the full responsibility until his retirement in 2007. After this, he is appointed advisor to the Board of Directors of the NKI and also as Professor of

Experimental Radiotherapy at the University of Amsterdam (UvA). Besides, from 2008 to 2011 he is consultant in the Institut Gustave Roussy in Villejuif (Paris) and Associate Professor at the University of Paris-Sud.

Innovation in radiotherapy.

Bartelink left his mark on the development of radiotherapy during a long period as radiation oncologist and head of Department of Radiotherapy at the NKI. Many innovations and technological developments were identified and stimulated by him at an early stage. In his position at the NKI he made a great contribution to the improvement of radiotherapy techniques and an increased chance of cure, together with his carefully selected staff of physicians, researchers, physicists and technical personnel.

During his periods abroad gaining work experience, Dr. Bartelink learns of new and promising treatment methods which he introduces after his return to the NKI. At the Institut Gustave Roussy the idea is developed for a sparing treatment of breast cancer by a combination of limited surgery followed by irradiation, as an alternative to the usual amputation. Together with surgeon Dr. Joop van Dongen, this treatment is put into practice. In a large European collaboration between many hospitals, the sparing treatment is put to the test with success. Another improvement in treatment is based on research which Bartelink has carried out at Stanford University. He studied in animals the possibility of increasing the sensitivity to radiation by combining radiotherapy with chemotherapy in the form of cisplatin. The results are very promising. On return to the NKI, this is applied with success in patients with a particular form of lung cancer. Later, this appears to work in other cancers too. Both the breast-sparing and the concurrent chemo-radiation treatments are rigorously tested at the NKI and further developed, becoming permanent "weapons" in the arsenal of treatment options. At Stanford University, Bartelink understands the importance of a radiobiology laboratory in the research into further improvements in radiotherapy. Back in The Netherlands, he succeeds in persuading the radiobiologists Adrian Begg and Fiona Stewart to leave the UK and come to Amsterdam. They establish a prominent radiobiological research department at the NKI.

Technical innovation in radiotherapy and oncology.

Next to new treatment methods, Harry Bartelink stimulates the introduction of technical innovation in diagnostic imaging and in the technique of designing and applying irradiation.

Collaboration with industry is an important condition for ground-breaking innovation in radiation treatments that are developed and introduced in the NKI. In addition to conventional X-ray diagnostics, advanced CT scanners, MRI scanners, PET-CT and SPECT scanners and ultrasound equipment are introduced used in the localisation and dose planning of tumours and prepare the way for image guided treatments.

The NKI develops an electronic X-ray camera which is a breakthrough in the online, real time observation of the therapeutic radiation beam within the patient. Building on this, the NKI becomes a partner in the development of the kilovolt X-ray Cone Beam CT application on linear accelerator treatment units. Image-guided radiotherapy becomes a spearhead in the NKI and the department of radiotherapy is worldwide in the forefront of introducing this accurate individually adapted form of irradiation.

Regional and (inter)national importance of the radiotherapy department.

Under the leadership of Harry Bartelink, the development of a multidisciplinary work method, such as promoted by his predecessor Klaas Breur, was continued. In the region, the department of radiotherapy is an active contributor with regular consultations in a number of hospitals in Amsterdam and the surrounding area, North Holland and het Gooi (region between Amsterdam and Utrecht). From the NKI, clinical trials studying the effect of multidisciplinary treatment methods are coordinated. Examples of this are lung, head and neck, anal cancer and breast cancer trials. Against this background of active international involvement, Harry Bartelink is invited to join the boards of international collaborative organizations, such as the European Organization for Research and Treatment of Cancer (EORTC), the European Cancer Organization (ECCO), the European Society for Radiotherapy and Oncology (ESTRO) and the Federation of European Cancer Societies (FECS). Staff members of the radiotherapy department of the NKI become involved in international trials and developments. For the industry, the radiotherapy department of the NKI is an attractive partner in the development and clinical testing of new equipment and accessories.

Reconstitution of the radiotherapy department.

Under Harry Bartelink, the department of radiotherapy grows rapidly. The number of patients increases further due to the increased life expectancy. The staff increases to more than 200 workers including 25 people involved just in research and software development. The leadership structure, developed for the historical small-scale situation, is no longer efficient in the growing department. Around 1993, a business manager is engaged, Frans Tolsma, who assists Bartelink

in the leadership of the radiotherapy department. Following a review of the organization, a new structure is introduced, according to the cluster model. The paramedical group and “physics and instrumentation” become, together with the group of physicians and the research department, the new sections within the structure with a head to lead each one. Bartelink remains the overall leader as Head of the Medical Cluster.

At the retirement of Harry Bartelink in 2007, Professor Marcel Verheij is appointed head of the Department of Radiotherapy at the Netherlands Cancer Institute.

Awards and honours granted to Professor G.M.M. Bartelink:

Harry Bartelink gained many honours and prizes in recognition of the important contribution to radiotherapy he made with his team. The following honours deserve special mention.

- *Knight of the order of the Netherlands Lion 2007*
- *Regaud medal (ESTRO, Leipzig, 2006)*
- *Breur Medallist (ESTRO: 1997)*
- *Honorary Fellow of the American College of Radiology (1997)*

****) Sources:***

- *Curriculum vitae, by H. Bartelink*
- *“ Ruim dertig jaar radiotherapie.....” (“More than 30 years of radiotherapy.....”) Farewell lecture published in Medische Oncologie, nr. 5, November 2007, pp 17-19 (Dutch)*
- *“Putting Europe first” by Helen Saul. Interview in Cancerfutures, vol 2, Sept/Oct 2003, pp 187-192*