Curriculum vitae of Roberto Israel Foroni.

Roberto Foroni graduated in theoretical nuclear physics. The subject of his final thesis, 'Droplet model and shell effects' concerned strong nuclear interactions which is possible to describe through parametrizable geometric models.

He achieved his Doctor degree. and obtained a fellowship for cancer research. During this period he started a cooperation with the National Cancer Institute of Milano (Experimental Oncology, Division B) in the experimental oncology field and with Florence University, the Biophysics Institute for the development and optimization of non coplanar and non conventional radiotherapy tretment plans. Particularly the oncology research turned towards the study of growth mechanisms in lab animals (mice, C3H, nude) of different tumoral families and their relevant response to experimental antiblastic drugs compounds.

In 1980 and 1982 he had the opportunity to spend a stage at the Haifa University Hospital, Biophysics Department. During that period he studied and aquired more specialization concerning the methods and algorithms used in conventional radiotherapy. The coordinator of the stay in Haifa was professor Morris Teatcher.

In 1981 he received an international scholarship for Cancer Research; location of stage: Holt Radium Institute in Manchester. At the Institute Roberto Foroni could pursuit experimental research both on definition of growth model in lab animals and on definition of the log-kill (that is to say the portion of killed cells) in case of chemotherapy or radiotherapy treatment. In concomitance with this research he had the chance to investigate throughly calculation methods in Radiotherapy. The coordinators of the reaearch during the stay were professor Wilkinson and professor Green.

In 1985-86 he spent a stage an the National Cancer Institute of Bethesda, Washington DC. In that Institute Roberto Foroni worked on growth models of experimental tumors, on the log-kill and on chemotherapy response. Coordinator of the research during the stay was Schoemaker, Ph.D. and professor Abraham Goldin. During the stay he started to study also pharmaco-kinetics and pharmaco-dynamics models. First collaborating with professor Dedrick from NCI, than with professor D' Argenio from Southern California University, where he could attend from 1986 to 1993 annual workshops and users meetings on pharmaco-kinetics and pharmaco-dynamics. The peculiarity of the research was especially devoted to non-linear analysis (non-linear data fitting) and to the multicompartimental theory (system theory).

Always in the pharmacological field, since 1990 he cooperates with the University of Verona, Immunology Institute for the analysis of project and data of experimental trials applied on threedimensional cultures and immunotoxic medicines.

Since 1986 he also started a formal partnership with the University of Verona, the Statistics Institute as commissioned teatcher. Also, since 1986 he started formal cooperation with the Polytecnic Institute of Milano, as external researcher. For the Polytecnic in Milano he followed in coordination with professor Maranzana some students graduating in Bioengineering on thesis in non-linear analysis and pharmacodynamics. Always with the Polytecnic in Milano in the pharmacology field, he started to study kinetics

models of urea in patients who underwent dyalisis tretment. The chied doctor to whom he related as a group was professor Biasioli of Legnago Hospital. In cooperation with Biasioli, Roberto Foroni is coordinator for the Regione Veneto, Health Department, of 3 scientific projects concerning pharmacology and dyalisis.

After a brief period in Labour Medicine and Radiotherapy, where he implemented a healing method for solid tumors by radiofrequences (50-915 MHz) techniques, Foroni works at the Neurosurgery Department, Stereotactic Unit at the Hospital and University of Verona, following in active way the different radiosurgical treatments with Gamma Knife and with Iodine-125 seeds. The dosing of Iodine-125 seeds is coordinated by a common project with the Polytechnic in Milan, nuclear Engeneering Department, coordinated by Prof. Folio-Para. He works also in 2D or 3D experimental dosimetry with GAF or gel compound. The research objective is to validate the treatment planning software and to verify the dose distribution in eccentric target performed with small collimators.

IEEE and ACM member, today he is interested in optimazation of radiosurgical treatments in arteriovenous malformations, in three-dimensional graphics (presurgical planning and modeling), in theory of systems and image analysis with TAC or RMI (functional Magnetic Resonance). In the neurosurgical non stereotactic field, Roberto Israel Foroni studies prediction signals and models for patients who underwent serious cranial events.

Foroni is winner of 6 research medical research grants, 1 european project and 1 Ministero della Ricerca Scientifica research project; in 2005 and 2009 received the honor to organize a bilateral meeting on medical neurosurgery research between Israel and Italy, under the sponsor of Ministero degli Affari Esteri. He partecipated at the meetings of the American Society of Clinical Oncology and Cancer Research. As well, from 1989 to 2001 he partecipated, actively, in different meetings of the American society for Artificial Organs and of the Stereotactic Neurosurgery Society. Since 1992 he actively partecipates to all user meetings of the Gamma Knife User Society. Roberto Israel Foroni is co-author of more than 80 scientific papers articles, most of them appeared in american literature.

Married with a child, he speaks English, French and Hebrew.

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