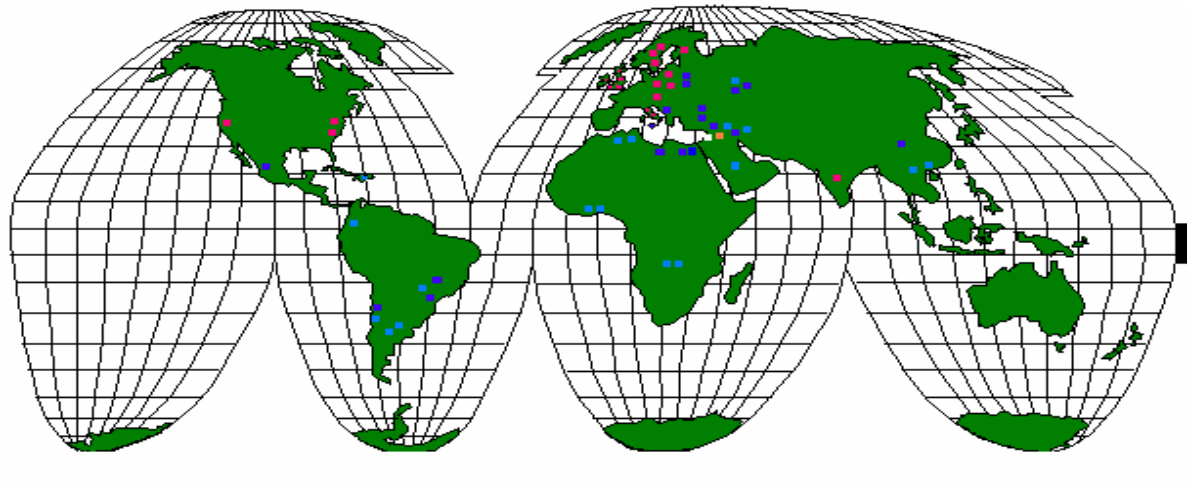
Cooperation of the „Frédéric Joliot-Curie" National Research Institute for Radiobiology and Radiohygiene and the International Atomic Energy Agency between 1957 and 2007

NRIRR sheet No.1.

IAEA provided fellowships for 6-12-month scientific training abroad to the following researchers of the NRIRR (**see red points** on the map):

- *Antonio Capote-Cuellar (Austria)*
- *Gábor Diósi (United Kingdom)*
- *Dr. Zsuzsa Almássy (Sweden)*
- *Dr. Sára Antal (Italy)*
- *Dr. Annamária Dám (Italy)*
- *Dr. Lajos Gazsó (United Kingdom)*
- *Dr. Júlia Gidáli (United Kingdom)*
- *Dr. Sarolta Gundy (United Kingdom)*
- *Dr. József Holland (United Kingdom)*
- *Dr. Sándor Igali (United Kingdom)*
- *Dr. Győző Jánoki (United States)*
- *Dr. Andor Kerekes (Sweden)*
- *Dr. Sándor Pellet (United Kingdom)*
- *Dr. László Szabó (1964-65 Sweden, 1967 Israel, 1969 India)*
- *Dr István Turai (Finland)*
- *Gabriella Mészáros (Netherland)*



Reception of IAEA fellows in the NRIRR:

Dr Lajos Balogh, Dr Lajos Gazsó, Dr Győző Jánoki, Dr Andor Kerekes, Prof. Dr. György Köteles, Dr Sándor Pellet, Dr Géza Sáfrány és Dr István Turai regularly received IAEA fellows from the countries seen on the map above: (see **blue points** on the map). The most IAEA fellows were accepted by Dr. Győző Jánoki for nuclear medicine research projects and Dr. Lajos Gazsó for radiation microbiology topics. We accepted 102 fellows from 25 countries for 51 months, in total.

Cooperation of the „Frédéric Joliot-Curie" National Research Institute for Radiobiology and Radiohygiene and the International Atomic Energy Agency between 1957 and 2007

NRIRR sheet No. 2/1.

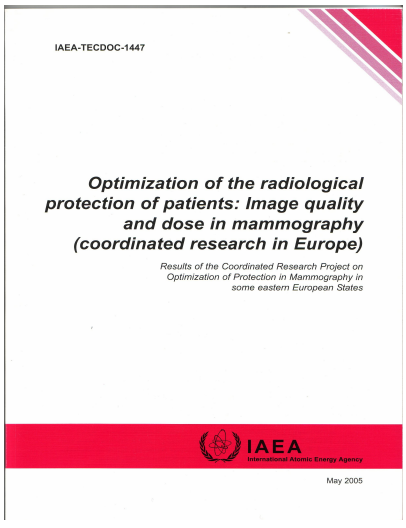
On behalf of the NRIRR the co-workers of the IAEA (employees) were:

Dr. Ferenc Antoni *(1965-68),*
Dr. László B. Sztanyik *(1969-74),*
Dr. György Köteles *(1974-79),*
Dr. István Turai *(1995-2002) and*
Antonio Capote-Cuellar *(2004-)*

The above Hungarian IAEA co-workers edited several dozens of books or were co-authors. The IAEA publications made by collaboration of NRIRR we list here:

1. „Planning for Off-Site Response to Radiation Accidents in Nuclear Facilities", *Safety Series No.55,* ***1981*** **(Dr Sztanyik B.L.)**
2. „Principles for Establishing Intervention Levels for the Protection of the Public in the Event of a Nuclear Accident or Radiological Emergency", *Safety Series No.72,* ***1985*** **(Dr Sztanyik B.L.)**
3. „Biological Dosimetry: Chromosomal Aberration Analysis for Dose Assessment", *TRS-260, IAEA, Vienna,* ***1986*** **(Dr. Köteles Gy.)**
4. „International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources", *Safety Series No.115-I, 1994* **(Dr Sztanyik B.L.)**
5. „Assessment and Treatment of External and Internal Radionuclide Contamination". *IAEA-TECDOC-869, 1996* **(Dr. Turai I.)**
6. „Methods for Estimating the Probability of Cancer from Occupational Radiation Exposure" *IAEA-TECDOC-870, 1996,* **(Dr Sztanyik L.B., Dr Turai I.)**
7. „Establishment and Use of National Registries for Actinide Elements in Humans". *IAEA-TECDOC-879, 1996* **(Dr. Turai I.)**
8. "Direct Methods for Measuring Radionuclides in the Human Body" *Safety Series No. 114, 1996* **(Dr. Kerekes A.)**
9. "Dosimetric and biomedical studies conducted in Cuba of children from areas of the former USSR affected by the radiological consequences of the Chernobyl accident" *TECDOC-958, 1997* **(Dr. Kerekes A.)**
10. „Diagnosis and Treatment of Radiation Injuries". *IAEA-WHO, Safety Reports Series No. 2, Vienna, 1998,* **(Dr. Köteles G.J., Dr. Turai I.)**
11. „Planning the Medical Response to Radiation Accidents". *IAEA-WHO, Safety Reports Series No. 4, IAEA, Vienna, 1998* **(Dr. Sztanyik L.B., Dr. Turai I.)**
12. „Health Surveillance of Persons Occupationally Exposed to Ionizing Radiation". *IAEA-WHO, Safety Reports Series No. 5, IAEA, Vienna, 1998* **(Dr.Sztanyik L.B., Dr.Turai I.)**
13. „The Radiological Accident in Tammiku". *IAEA, Vienna, 1998* **(Dr. Turai I.)**
14. „Dosimetric and Medical Aspects of the Radiological Accident in Goiania in 1987". *IAEA-TECDOC-1009, Vienna, 1998* **(Dr. Turai I.)**
15. „Health Effects of Radiation and Medical Surveillance". *Practical Radiation Technical Module No.3, IAEA, Vienna, 1998* **(Dr. Turai I.)**
16. "Assessment of Doses to the Public from Ingested Radionuclides" *Safety Reports Series, No. 14, 1999* **(Dr. Kerekes A.)**
17. „The Radiological Accident in Lilo". *IAEA, Vienna, pp.103. 2000* **(Dr. Turai I.)**
18. „The IAEA Emergency Response Network. ERNET." *IAEA, Vienna, 2000* **(Dr. Turai I.)**
19. „Indirect Methods for Assessing Intakes of Radionuclides Causing Occupational Exposure". *Safety Reports Series No.18, IAEA, Vienna, pp.100, 2000* **(Dr. Turai I.)**
20. „The Radiological Accident in Yanango". *IAEA, Vienna, pp.41, , 2000* **(Dr. Turai I.)**
21. „The Radiological Accident in Istanbul". *IAEA, Vienna, pp.75. , 2000* **(Dr. Turai I.)**
22. „How to recognize and initially respond to an accidental radiation injury". *Leaflet and poster, published in all UN languages, IAEA, Vienna, 2000* **(Dr. Turai I.)**
23. „The Criticality Accident in Sarov". *IAEA,Vienna, pp.46, 2001* **(Dr. Turai I.)**
24. „ Present and Future Environmental Impact of the Chernobyl Accident". *IAEA-TECDOC-1240, IAEA, Vienna, pp.128. 2001* **(Dr.Sztanyik L.B., Dr.Turai I.)**
25. „Cytogenetic Analysis for Radiation Dose Assessment". A Manual. *IAEA Technical Report Series, No. 405, Vienna, pp.127. 2001* **(Dr. Köteles G.J., Dr.Turai I.)**
26. "The Radiological Accident in Gilan". *IAEA, Vienna, pp.46. 2002* **(Dr. Turai I.)**
27. "The Radiological Accident in Samut Prakarn". *IAEA, Vienna, p.52. 2002* **(Dr.Turai I.)**

28. "Radiological Protection for Medical Exposure to Ionizing Radiation". *IAEA-WHO Safety Guide No. RS-G-1.5, IAEA, Vienna, pp.75. 2002* (**Dr.Sztanyik L.B., Dr.Turai I**.)
29. „Follow-up of delayed health consequences of acute accidental radiation exposure. Lessons to be learned from their medical management". *IAEA-TECDOC-1300, IAEA, Vienna, pp. 129. 2002* (**Dr.Turai I**.)
30. „Preparedness and Response for a Nuclear or Radiological Emergency". *Safety Requirements, GS-R-2 (DS43), IAEA Vienna, pp.72. 2002* (**Dr.Turai I**.)
31. „Medical Preparedness and Response. Training for Radiation Emergency Preparedness and Response." *IAEA-WHO Educational material on CD-ROM, EPR-MEDICAL/T-2002, IAEA, Vienna, pp.960. 2002* (**Dr. Horváth Gy., Dr. Köteles Gy., Dr.Turai I.)**
32. „Use of electron paramagnetic resonance dosimetry with tooth enamel for retrospective dose assessment". *IAEA-TECDOC-1331, IAEA, Vienna, pp.57.* ***2002*** (**Dr.Turai I**.)
33. „Method for Developing Arrangements for Response to a Nuclear or Radiological Emergency - updating IAEA-TECDOC-953", *EPR-Method, pp.269, IAEA, Vienna,* ***2003*** (**Dr.Turai I.)**
34. „ The Radiotherapy Accident in Bialystok". *IAEA Vienna, pp.103.* ***2004*** (**Dr.Turai I**.)
35. „Health Effects and Medical Surveillance". *Practical Radiation Technical Manual, IAEA, Vienna, pp. 62.* ***2004*** (**Dr.Turai I**.)
36. „Generic Procedures for Medical Response During a Nuclear or Radiological Emergency". *EPR-Medical-2005, IAEA, Vienna, pp.287.* ***2005*** (**Dr.Turai I**.)
37. " Arrangements for preparedness for a nuclear of radiological emergency." IAEA-WHO, Safety Standard, GS-G-2.1, IAEA, Vienna, 159 p.
2007. (Dr. Turai I.)



Staff members of NRIRR contributing to IAEA expert missions:

Dr. Ballay László
Dr. Gazsó Lajos
Dr. Jánoki György
Dr. Kerekes Andor
Dr. Köteles György
Dr. Pellet Sándor
Dr. Szabó László
Dr. Sztanyik B. László
Dr. Turai István
Dr. Várterész Vilmos

These staff members of NRIRR contributed to over one hundred times to IAEA expert missions in Europe, Africa and Asia.

IAEA/RTCs (Regional Training Courses) and Workshops conducted by NRIRR in Budapest:

- Nov.1986 and June 1988: „Radiation Technology and Engineering" (Dr. Gazsó L.)
- Oct.1991 and May 1992: „Industrial Radiation Sterilization" (Dr. Gazsó L.)
- May 1993: „Medical Preparedness for Radiation Accidents" (Dr. Sztanyik B.L. és Dr. Turai I.)
- Sept.1999: „Medical Education to Nuclear Accident Preparedness" (Dr. Köteles Gy., Dr. Horváth Gy., Dr. Turai I.)
- Aug.2000: „Development of Kits for Tc-99m Radiopharmaceuticals for Infection Imaging" (Dr Jánoky Gy.)
- Oct.2001: „Assessment of Occupational Exposure due to Intakes of Radionuclides" (Dr. Kerekes A.)
- Aug.2004: „Tumor Radiosenzitizers – the Current Status of Development Various Approaches" (Dr. Sáfrány G.).

NRIRR participated in the following IAEA coordinated research projects:

- „Radioecology of Danube river" 1978-1984 (Dr Sztanyik B.L., Dr Köteles Gy.)
- „Age-dependency of Metabolic Parameters for Development of Models Used in Internal Dose Assessments„ 1988-1992 (Dr Kerekes A.)
- „Microbiological quality control and sterility safety evaluation in radiation sterilization of local medical supplies in Latin America" 1992-1994 (Dr Gazsó L.)
- „Biodosimetry" 1997-1999 (Dr Köteles Gy.)
- „Image Quality and Patient Dose Optimisation in Mammography in Hungary" 1999-2001 (Dr Giczi F.)
- „Development of agents for imaging central nervous system (CNS) receptors based on 99m-Tc." 1995-2001 (Dr. Bodó K.)
- „Development of kits for Tc-99m Radiopharmaceuticals for infection imaging" 2003 (Körösi László)
- „Intercomparative evaluation of therapeutic radiopharmaceuticals" 2002-2005 (Dr. Jánoki Gy.)
- Testing of the Implementation of the Code of Practice on Dosimetry in X-ray Diagnostic Radiology, 2005-2007 (Dr. Pellet S.)
- Development of radioimmunoassay for the measurement of leptin in human serum. Dr. Jánoki Gy.)

2006 (Dr Balogh L.,

In the frame of the IAEA organized coordinated research topics the researchers of the NRIRR created numerous **publications** and they gave over hundred lectures at IAEA scientific conferences. A list of scientific papers related to IAEA prepared by the staff members of NRIRR:

Köteles, G. J.: Internationally co-ordinated research in radioecology and environmental monitoring. In: Proc. 4th Int.Congr. of IRPA, Paris, *Vol. 2, 629-632, **1977***

Köteles, G. J.: The IAEA organisation, work and services in selected fields. *TECDOC-220,, IAEA, Vienna, **1979***

Köteles, G. J.: On the radioecology of the Danube river. *IAEA Bulletin, 22, 46-52 **1980***

Jánoki Gy. A., L.Kőrösi, B.Spett, G.Klivényi: Analysis of protein based radiopharmaceuticals using high resolution electrophoretic techniques. *Radiopharmaceuticals and Labeled Compounds IAEA. 536-539. **1984.***

Mohari K., L.T.Kocsár, Gy .A. Jánoki: Application of 125-I-HPL /Human Placental Lactogen/ prepared with different labelling. *Radiopharmaceuticals and Labeled Compounds IAEA. **1984.** 547-549.*

Turai I., Sztanyik B.L.: Assessment of ^{90}Sr and ^{137}Cs activity concentration in human tissues in Hungary, following the Chernobyl accident. *IAEA-TECDOC-964, 48-53. **1997***

Turai, I.: Activities of the IAEA related to medical assistance in radiological emergencies. *Proc. IRPA Reg. Congress on Radiation Protection, Budapest, 22-27 Aug. **1999***

Turai, I.: Protection of the Patient in Medical Exposure - the IAEA Safety Guide. *Proc. 20th Annual Meeting of Israeli Nuclear Societies, Ein Gedi, Israel, pp. 24-28, **1999***

Turai, I., Recent activities of the IAEA with respect to diagnosis and treatment of radiation injuries. *Proc. "Diagnosis and Treatment of Radiation Injury" eds. G. Wagemaker, A. Karaoglou, P. Gourmelon & B. Weiss, World Scientific, EUR-18553, **2000***

Turai, I.: Thyroid cancer and Chernobyl - follow up results for 1986-1998. *Proc. of Intl. Conf "Epidemiology and Risk Factors of Thyroid Cancer", Szczyrk, Poland, 10-13, **2000***

Turai, I.: The IAEA's Co-ordinated Research Project on Biodosimetry, 1998-2000. *Appl.Rad.Isot. 52: 1113-1116, **2000***

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Turai, I., Crick, M., Ortiz-Lopez, P., Nogueira de Oliveira, C., Wrixon, A.D. Response to Radiological Accidents: the Role of the International Atomic Energy Agency. *Radioprotection, 36(4): 459-475, **2001***

Körösi, L., L. Balogh, D. Máté, A. Polyák, R. Király, Gy. Jánoki: 99m-Tc-labelled ligands for inflammation and infecton imaging. *IAEA-TECDOC-1414, **2003***

Giczi F, Pellet S. et al: Quality Assurance in New Techniques and Radiation Medicine. *International Conference Vienna, Austria 13-15 November **2006***

Pellet S., Faulkner, K., Vano, E., Padovani, R., Giczi F., Gáspárdy G., Temesi A.: Hungarian contribution to the Sentinel Project. In: *Book of Extended Synopses, International Conference on Quality Assurance and New Techniques in Radiation Medicine, Vienna, 13-15 Nov. 2006, pp. 542-543. **2006***

Horsman MR., Bohm L., Margison GP., Milas L., Rosier JF., Safrany G., Selzer E., Verheij M., Hendry JH.: Tumor radiosensitizers – current status of development of various approaches: report of an International Atomic Energy Agency meeting. *Int J Radiat Oncol Biol Phys. 64. 551-56, **2006***

Balogh, L., K. Nagy, A. Lagarde, T. Forgách, M. Audikovszky, Gy. Jánoki: Development of radioimmunoiassay for the measurement of leptin in human serum. *In: Development of radioimmunometric assays and kits for non-clinical applications. IAEA-TECDOC-1498, 131-138, **2006***