SYMPOSIUM ON RADIobiology, RADIOPATHOLOGY & RADIOPROTECTION
SATURDAY 28TH OF NOVEMBER, 2015
LEBANESE ORDER OF PHYSICIANS, BEIRUT - LEBANON
Radioisotopes and ionizing radiations have become an integral part of modern human life. Many advances in medicine, industry, energy production, and in the unfortunate development of weapons as well, are based on radioactivity and can remain so for a long time. Our country, Lebanon, tries to follow modernity in all its aspects by using radioactive tools, especially in medical fields. The effects of radioactivity are harmful on humans and on the environment when it is misused or when the necessary safety measures are not taken. Therefore it is very important to provide basic scientific evidence related to the effects of ionizing radiations on human beings and the environment, and the means of radiation protection.

THE LEBANESE SOCIETIES OF NUCLEAR MEDICINE, MEDICAL ONCOLOGY AND RADIOLOGY are cooperating to organize the FIRST SYMPOSIUM OF RADIOBIOLOGY, RADIO-PATHOLOGY AND RADIO PROTECTION in Beirut, on the 28th of November, 2015. The main objective of this symposium is to create awareness in various environments such as: universities, hospitals and society at large on the effects of ionizing radiations and on radiation protection. Thus the objectives of this symposium directly target:
1) University graduates of medicine, pharmacy, biology, radiation physics and radiological techniques.
2) The entire medical profession, physicians, radiology technicians, nurses and medical secretaries.
3) Patients and parents of patients undergoing procedures of radiology, nuclear medicine or radiation therapy.

The scientific community involved in the use of ionizing radiation has invited international speakers to highlight the latest scientific advances in radiobiology, radiopathology, and radio protection.

We welcome the participation of any person interested in these subjects, and hope that this symposium improves our knowledge about the effects of ionizing radiations and their safe use.

FERAS CHEHADE M.D. PH. D.
President of Lebanese Society of Nuclear Medicine

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ASST. PR. MOHAMAD HAIDAR
PR. ELIF HINDIE
DR. HAITHAM KHAYAT
DR. ANWAR Khabbaz
DR. CLAIRE VAYLET M.D. PH. D.
Conferences, lasting 45 minutes each, followed by 5 to 10 minutes of assistance questions, will be given by a harmonious group of speakers that are experts in the field. The schedule including the names of speakers and the titles of corresponding conferences is as follows:

<table>
<thead>
<tr>
<th>Time</th>
<th>Conference Title</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>09:15</td>
<td>Welcome Note from the President of Symposium</td>
<td>Dr. Feras Chehade M.D. Ph.D., Nuclear Medicine Physician and Ph. D. Radiobiology Radiopathology.</td>
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<tr>
<td>09:30</td>
<td>General Effects of DNA Repairs after Cell Irradiation, and New Trends in Oncology.</td>
<td>Dr. Marie Dutreix; Research Director at CNRS and Vice President of “La Société Française du Cancer”, Institut Curie, Orsay, France.</td>
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<td>11:30</td>
<td>Dosimetry of Ionizing Radiations in Biological Tissues: The Importance of Calculations on a Microscopic Scale.</td>
<td>Pr. Christophe Champion; Nuclear Research Center of Bordeaux, Gradignan, France.</td>
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<td>12:30 - 14:00</td>
<td>Lunch Break</td>
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<td>14:00</td>
<td>Hypersensitivity Syndromes to Ionizing Radiations.</td>
<td>Pr. Fady Geara; Professor of Radiation Oncology, American University of Beirut Lebanon.</td>
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<tr>
<td>15:00</td>
<td>Lessons in Radioecology: Thirty Years after the Chernobyl Accident.</td>
<td>Pr. Elif Hindie; Nuclear Medicine Physician CHU Bordeaux, Speaker at INSTN Saclay France, and Specialist in Microanalysis.</td>
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<td>16:00</td>
<td>Radiation Burns: Pathophysiological Data, Clinical Presentation and Cares Feedback.</td>
<td>Dr. Gabrielle Weber; Radiology Physician, Hopital Militaire Percy, France.</td>
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<td>17:00</td>
<td>Radioprotection in Pediatric Imagings: The Point of View of the Nuclear Medicine Physician.</td>
<td>Dr. Claire de Labriolle-Vaylet M.D. Ph. D.; Head of Pediatric Nuclear Medicine Department at Trousseau Hospital, Paris France, and Speaker at INSTN Saclay France, and ESNM Vienna Austria.</td>
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Many analytical methods are used to determine the tissue distribution and the cellular location of radioelements in biological tissues, allowing accurate calculations of the radioactive doses deposited inside cells, and better understanding of their biological effects. As examples, are reported below, images of radioautography and secondary ion mass spectrometry (SIMS).

**Radioautography**

is a technique of determination of the tissue distribution of radioelements within biological tissues.

A figure: Radioactivity is concentrated along the posterior aspect of eyeball (sclera and choroid), while vitreous body and anterior aspect are completely non-active.

B figure: Inserted for correlative purpose, showing anatomy structures of mammal eyeball.

F. Chehade, N. Colas Linhart, A. Petiet, D. Le Guludec.
Biophysics laboratory, Xavier BICHAT University Of Medicine, Paris France.

**Secondary Ion Mass Spectrometry**

is a microscopic method of detection and localization of isotopes at the cellular scale.

Microscopic distribution of samarium 152 in rat cartilage after chronic intoxication.

A figure: Cartilage matrix is rich in calcium 40. SIMS mapping of calcium calibrated at 40 UMA allows recognition of tissue structures. Lower part of tissue represents hyaline cartilage that contains isogeneous groups of chondrocytes, and upper part corresponds to perichondrium.

B figure: SIMS calibrated at 152 UMA of samarium shows foci of concentration preferentially located along hyaline cartilage.

F. Chehade, C. Vaylet, H. Hindie, F. Escaig, P Galle.
SIMS 300 CAMECA, Biophysics laboratory, Creteil University Of Medicine, Paris France.