

Three-week training course on Radiation Epidemiology and Dosimetry

03.11-21.11.2014

Helmholtz-Center Munich

HelmholtzZentrum münchen
Deutsches Forschungszentrum für Gesundheit und Umwelt



General information:

DoReMi (www.doremi-noe.net) is a Euratom-funded Network of Excellence set up to promote and integrate European research into the risks of exposure to low doses of ionising radiation. In addition, DoReMi facilitates and promotes training and education in support of the research programme within the project, and also makes more widely available training opportunities in order to help attract top-level students into the field. As part of this initiative, a 3-week training course on "**Radiation Epidemiology and Dosimetry**" is jointly organised by the Helmholtz-Center Munich and the University of Pavia. It is open to postgraduate students and to scientists studying biological or medical aspects of ionizing irradiation in laboratories in the European Union. All lectures are given in English.

Scope of the course:

During the lectures, seminars and lab and site visits of the course the participants will be introduced into general methods of epidemiology, measurements of radiation exposure and retrospective dose assessments, quantification of radiation late effects and calculation of risk factors. Special focus will be given to recent issues of radioactive contaminations such as after the Chernobyl and Fukushima accidents. Observations on occupational and medical exposed cohorts with regard to late malignancies and non-cancer effects will be critically evaluated.

During the course several sites will be visited (such as the HMGU dosimetry service and a medical radon spa), where environmental samples will be collected for a subsequent measurement.

In addition to teaching state-of-the art knowledge of radiation epidemiology and dosimetry, lecturers from various European universities and institutes will also provide the students with an exclusive insight into their own research projects.

Organisation of the course:

The course is jointly organised by the Helmholtz Centre Munich (Werner Rühm), and the University of Pavia (Klaus Trott).

The course is open to any postgraduate student or scientist working in an EU academic institution. Participants from DoReMi member institutions will get free accommodation. Public transport and travel fees to the site visits will be covered. There is no course fee. A certificate of attendance will be issued to each participant at the end of the course.

People wishing to apply should submit the following documents by e-mail to the organiser werner.ruehm@helmholtz-muenchen.de including

1. A letter of application
2. A CV with a description of the scientific career
3. A supporting letter from the supervisor/head of laboratory (only for PhD students)

Confirmations of acceptance will be sent back immediately after the decision. After the **deadline for applications** (October 3rd 2014) only a limited number of positions is available. Updated information on the course will soon be available at the web-site <http://www.helmholtz-muenchen.de/iss/doremi/index.html>

Please note that due to limitations at the visited external research sites there is a maximum number of 12 participants.

Preliminary Time-Table

03.11. Lectures

- Welcome/Organisation
- ICRP concepts in Radiation Protection
- Principles of Dosimetry
- Principles of Radio-Epidemiology

04.11. Lectures

- Dosimetry of Internal Exposures
- Cancer Registries
- Dosimetry of the A-bomb Survivors in Hiroshima

05.11. Lectures

- Health Effects among A-bomb Survivors
- Noncancer Diseases among A-bomb Survivors
- Thyroid Cancer - External Exposure in Radiotherapy, the Marshall Islands

06.11. Lectures/Visit

- Dosimetry of the Techa River Population
- Visit of HMGU Dosimetry Service

07.11. Lectures

- Chernobyl and Fukushima - Accidents and Exposures
- The Chernobyl Accident, Health Effects
- Epidemiology Among the Techa River Population

09.11. Transfer to Salzburg, Austria

10.11. Lectures

- International Nuclear Terrorism
- Radon in the Human Environment
- Radon in the Human Environment

11.11. Field Trip

- Water Sampling
- Visit of Radon Spas in Bad Gastein

12.11. Lectures / Labwork

- Radon Metrology
- Lung Dosimetry
- Measuring the Gastein Spa Water and Air Samples

13.11. Lectures / Lab work

- Lung Dosimetry
- Lung Dosimetry Model / Lab Work
- Measuring the Gastein Spa Water and Air Samples

14.11. Transfer to Munich, Germany

17.11. Lectures

- Epidemiology of Radiation-Induced Cataracts
- Treatment Planning in Radiotherapy
- Leukemia Clusters at Nuclear Installations

18.11. Lectures

- Radon in Homes
- Radon Epidemiology of Uranium Miners
- Epidemiological Studies for Medical Radiation Exposure

19.11. Lectures

- Effectiveness and Late Radiation Effects after Radiotherapy for Non-Malignant Diseases
- Doses from Medical Imaging (X-Rays, CT, ...)
- Dose to the Eye Lens

20.11. Lectures:

- Doses to the Heart
- Epidemiology Radiation-Induced Heart Diseases
- Modern External Treatment Modalities in Radiotherapy

21.11. Lectures/Evaluation/Farewell

- Second Malignancies after Radiotherapy
- Written Test and Self-Evaluation
- Final Discussion, Farewell