

Seminarium Studium Doktoranckiego NCBJ
Poniedziałek, 22 stycznia, godzina 9:00
Sala 22 w NCBJ, Hoża 69

*

*

***Speaker*: Joanna Reszczyńska**

***Title*: Hyper-radiosensitivity phenomenon and significance of human individual radiosensitivity in modeling of Low Dose Radiation Biological Effects.**

***Abstract*:** For ionization radiation (IR) induced cancer, a linear non-threshold (LNT) model at very low doses is the default used by a number of international organizations and in regulatory law. However, experimental observations and theoretical biology have found that other dose-response curves can exist at those very low doses. This approach includes detailed, molecular descriptions of cells mechanisms to develop a dose-response model either through a set of nonlinear, differential equations or a stochastic approach based on Monte Carlo simulations. Both methods are subject to the body's reaction. The existence of heritable radiosensitivity syndromes and clinical observations in radiotherapy patients suggests that human cellular radiosensitivity differs among individuals. The assessment of the more radiation-sensitive and the more cancer-prone people is very important issue. This seminar discusses the bases of low-dose hyper-radiosensitivity (HRS) with reference to the molecular regulation of DNA repair and cell cycle control processes. The aim of the presented study was to examine, using the micronucleus (MN) assay, the low-dose radiation response of blood cells lymphocytes from healthy donors and to determine whether the method can be used to verify the hypothesis of the HRS phenomenon occurrence in general population.