

**WORKSHOP**  
**Filling a gap between epidemiology and biology**  
**Biologically-based modeling of radiation-induced carcinogenesis**

Date: March 22-23, 2018

Place: Radiation Effects Research Foundation, Hiroshima, Japan

**Program**

Thursday, March 22, 2018

9:00 - 9:10 Welcome and introduction to the workshop

**Session 1: Introduction to RERF studies**

9:15 - 9:35 Epidemiological study overview: Kotaro Ozasa (RERF)

9:35 - 9:55 Research Resource Center overview: Eric Grant (RERF)

9:55-10:15 Coffee Break

**Session 2: Mechanistic modeling of carcinogenesis I** (Chair: Kyoji Furukawa, RERF)

10:15 - 11:00 Christian Kaiser (Helmholtz Center, Munich, Germany)

Linking molecular biology and radiation epidemiology with biologically-based models of cancer risk assessment

11:00 -11:45 Hiroshi Haeno (Kyushu University, Fukuoka, Japan)

Mathematical modeling of cancer evolution in pancreatic cancer

11:45 - 12:00 Discussion

12:00 - 13:00 Lunch

**Session 3: Mechanistic modeling of carcinogenesis II** (Chair: Michiaki Kai, Oita University, Japan)

13:00 - 13:45 Georg Luebeck (Fred Hutchinson Cancer Research Center, Seattle, USA)

Time Scales in Colorectal Carcinogenesis from initiation to transformation to detection

13:45 - 14:30 Giorgios Stathopoulos (Helmholtz Center, Munich, Germany)

Noemi Castelletti (Helmholtz Center, Munich, Germany)

Risk of lung adenocarcinoma from smoking and radiation arises in distinct molecular pathways

14:30 - 14:40 Discussion

14:45 - 15:00 Coffee break

**Session 4:** Biological modeling (Chair: Otsura Niwa and Yoshiya Shimada)

15:00 - 15:45 Cristian Tomasetti (Johns Hopkins University School of Medicine, Baltimore, USA)  
Cancer etiology, cancer models and the role of the background mutation rate

15:45 - 16:30 Nori Nakamura (RERF)  
A pathway forgotten in radiation carcinogenesis: advancement in time

16:30 - 17:15 Richard Wakeford (The University of Manchester, Manchester, UK)  
Irradiation in utero and subsequent cancer risk

17:30 - Reception at Hijiyama Hall

Friday, March 23, 2018

**Session 5:** Young age at exposure; why is it radiosensitive? (Chair: N Nakamura and R Wakeford)

9:00 - 9:15 Nori Nakamura (RERF)  
What makes young individuals at higher risk of radiation-related cancer

9:15 - 10:00 Mary-Helen Barcellos-Hoff (University of California, San Francisco, USA)  
Interaction of age and radiation quality on the development of mammary carcinomas

10:00 - 10:15 Daisuke Iizuka (QST-National Institute of Radiological Sciences, Chiba, Japan)  
Strain differences in response of mouse mammary stem cells to low dose radiation exposure

10:15 – 10:30 Discussion

10:30 - 10:45 Coffee break

10:45 - 11:30 Yoshiya Shimada (QST-National Institute of Radiological Sciences, Chiba, Japan)  
Effect of age at exposures on radiation carcinogenesis and underlying mechanisms

11:30 – 12:15 Round table discussion

End of workshop