

JOINT INSTITUTE FOR NUCLEAR RESEARCH



# MEETING IN NOR AMBERD

*Fifth International Conference,  
Dedicated to N. W. Timofeeff-Ressovsky  
and His Scientific School*

«**MODERN PROBLEMS OF GENETICS,  
RADIOBIOLOGY, RADIOECOLOGY,  
AND EVOLUTION**»

Nor Amberd, 5–10 October 2021

*ABSTRACTS OF PRESENTATIONS  
MEMORIES & DISCUSSIONS  
LECTURES*

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**TIMOFEEFF-RESSOVSKY'S VOICE:  
FROM CHILDHOOD MEMORIES AND FAMILY RELATIONSHIPS  
TO WORK ON GENE TARGETING AND GENE REPAIR IN COLOGNE  
AND BERLIN-BUCH**

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Timofeeff-Ressovsky worked in Berlin-Buch from 1925 to 1945. With Delbrück and Zimmer, in 1935, he published an early, pioneering paper on the nature of gene mutation and structure. I knew him through family relationships. Choosing immunology and genetics as my scientific subjects, I started my own research group at the Genetics Institute in Cologne, which Max Delbrück and Josef Straub had founded after the Second World War, in 1962. When in the end of the 1980ies targeted mutagenesis through homologous recombination became a reality, my group developed new techniques to delete or modify genes in mouse cells in a conditional manner, and we became fascinated by the new insights into gene function gained through this approach. After a subsequent stay of 10 years at Harvard Medical School I moved, in 2011, to the Max-Delbrück-Center in Berlin-Buch, the very place where Timofeeff-Ressovsky had done his original work. This was the time of the most recent revolution in the field of gene editing, brought about by the use of RNA-guided DNA nucleases. We immediately adopted this new tool and set out to modify and repair genes in the hematopoietic system of mouse and human. I will exemplify the unprecedented power of this approach through recent experimental work of my group.