

# RADIOBIOLOGY

## Radiobiology in Times of Coronavirus Pandemic

On 16 March 2020, all experimental research came to a stop at the University Medical Center Groningen (UMCG) in The Netherlands. Although we had seen this coming it was still a shock and major disaster for many ongoing experiments. Since the radiobiology lab of the Radiation Oncology Department is situated in the Department of Biomedical Sciences of Cells and Systems, section Molecular Cell Biology, we were able to collaborate with many other researchers to share the burden and the problems that the shutdown caused. Luckily, we were allowed to continue long-term experiments, some of which were due to last more than a year (such as studies of the late effects of radiobiology on normal tissue of brain, heart and salivary glands) on a very low-level basis.

The shutdown is probably more of a disaster in clinical research, where patient follow-up has been stopped in most cases. However, for pre-clinical research a major delay has damaged the goals of many time-limited projects. In the UMCG radiobiology lab, which houses three groups that are led by principal investigators Lara Barazzuol, Peter van Luijk and me, almost all researchers have temporary, defined contracts. Researchers need to finish PhDs before set deadlines and/or publish high-impact papers to secure potential tenure in the future. Many of these people are very ambitious and several come from countries all over the globe. They have left friends and families to pursue international scientific careers. Now they have been isolated in their apartments with limited or no social contact and they have had to work from there. They have been able to do little more than analyse data, read papers, plan new experiments, hold digital meetings and write manuscripts.

Now that the lockdown is gradually being relieved, the lab is reopening and experiments of high importance can be performed. So the researchers are allowed to leave their isolation. Hence, for this newsletter I asked them to pick and shortly summarise a paper that they had read during this period and found to be interesting to the radiation research community. Some of them also offer personal views of their circumstances, which show great flexibility, ambition and positive attitudes towards the situation. Their views make me grateful to work with these young people and lead me to feel positive about the future.

[The effects of low dose ionising radiation on angiogenesis and post-embryonic development](#)

[Alleviation of post-radiation neurocognitive decline in mice](#)

[A potential novel strategy for cancer treatment](#)

[53BP1/RIF1 signalling is shown to promote cell survival after multifractionated radiotherapy](#)

[AIM2 inflammasome surveillance of DNA damage shapes neurodevelopment](#)

[The effect of cranial irradiation on the thalamus](#)

[cGAS-STING-type 1 interferon axis as a key mediator of IR-induced liver damage](#)

[Adverse cardiac effects of cancer therapies: cardiotoxicity and arrhythmia](#)

[An acellular extract restores function of irradiation-injured salivary glands](#)



**Rob P. Coppes**  
University of Groningen  
University Medical Center Groningen  
Groningen, The Netherlands