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## Effects of microgravity and below-background radiation in the pathogenesis of Orsay virus infection of *Caenorhabditis elegans* - (remote)

*Tuesday, 20 August 2024 12:00 (30 minutes)*

20-minute talk + 10-minute questions

In the near future, space missions will be extended to meet exploration goals. Space conditions, particularly microgravity and radiation, present unique stresses for organisms that they have not evolved to handle. The impact of these conditions on viral infections and host antiviral defenses is not well understood. *C. elegans*, a model organism, and its natural virus, Orsay virus (OrV), were used to study these interactions. The study examined the viral load during *C. elegans*' larval development under simulated microgravity using a random position machine and below-background radiation conditions at LSC. Our findings revealed changes in the viral load and effects on *C. elegans*' fitness traits in the three conditions: microgravity, below-background radiation, and both combined. Transcriptome analyses of infected worms in these conditions are underway to further understand these stresses and their impact on the host. Overall, the data indicate that space conditions can influence viral infections, which is a significant discovery for future space missions.

**Presenter:** ELENA, Santiago

**Session Classification:** Studies of Life in Low Background Radiation