Project title:
Telomere replication and repair

Telomeres are essential for the stability of eukaryotic chromosomes and defects in their replication and repair have been linked to cancer and aging.

The aim of this project is to characterize the role of novel telomere proteins in the replication and repair of telomeres. The project will combine fluorescence microscopy, genetic and biochemical analyses to study telomere integrity and function in living cells. Specifically, novel telomere proteins will be tagged with green or red fluorescent protein to monitor their localization in the cell during the different cell cycle and developmental stages of the cell. Mutational analysis of the genes encoding novel telomere proteins will be conducted and the short- and long-term effect on telomere length maintenance will be analyzed by Southern blotting and quantitative PCR. Further, alternative lengthening of telomeres (ALT) will be monitored in telomerase-negative cells. The requirement for the novel telomere genes for cell viability will be determined by clonogenic cell survival and the DNA damage response to uncapped telomeres analyzed in relevant mutants.

You will work together in a team with other researchers and students to address various aspects of the project.

For more information please contact:
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