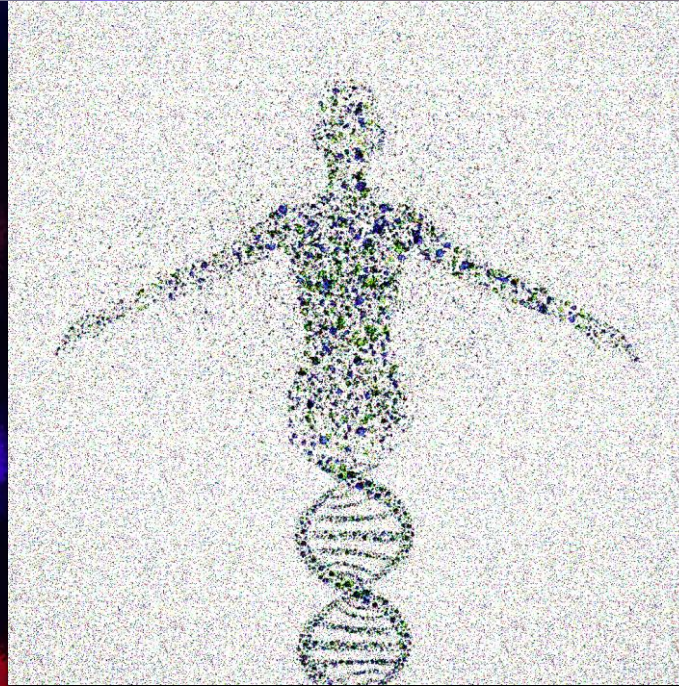


Keeping DNA Stable: Why does it matter in cancer & cancer treatment?

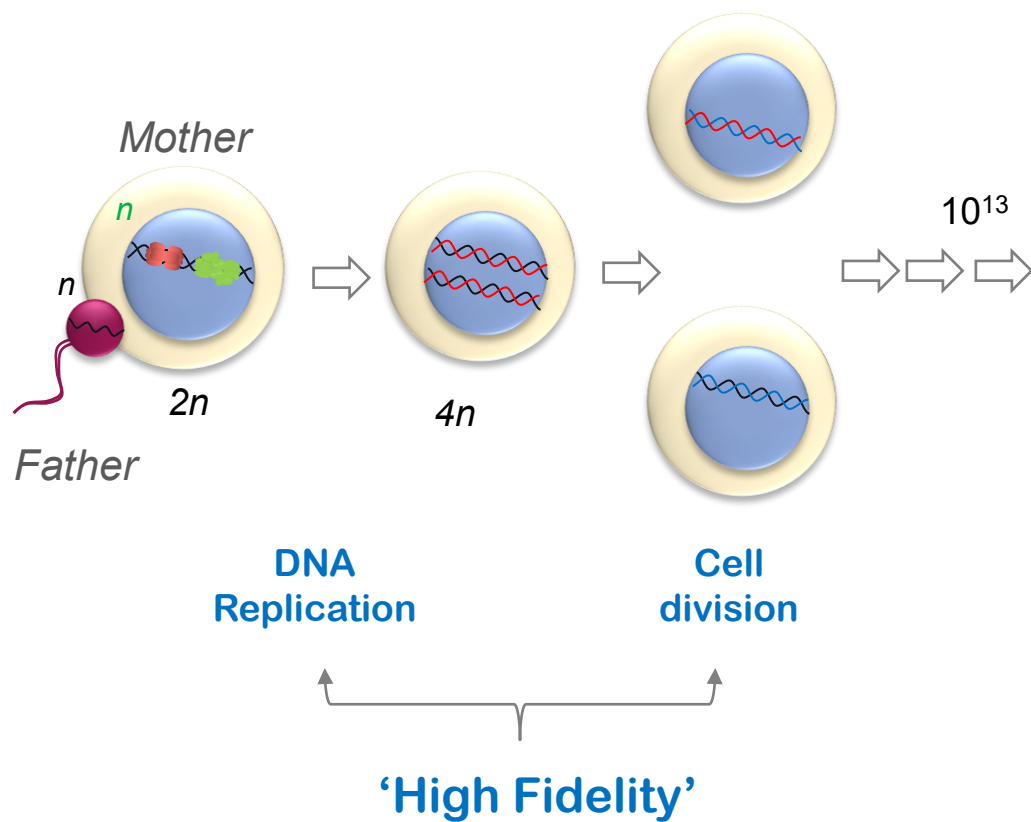


Kumar Somyajit

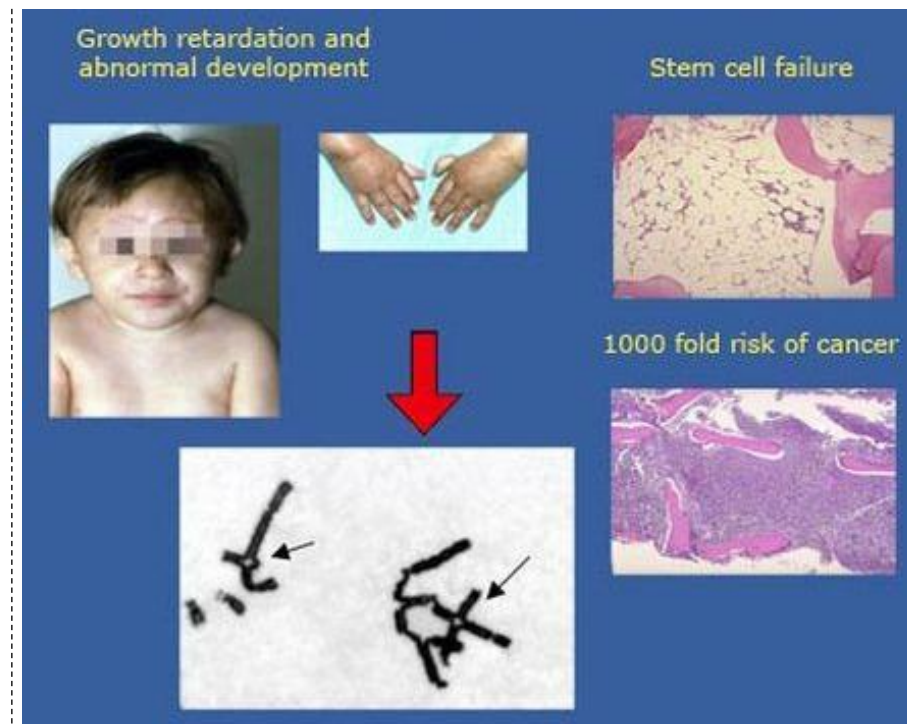
Associate Professor

Dept. of Biochemistry & Molecular Biology
University of Southern Denmark, Odense

Danske Kræftforskningsdage
27-08-2026



Fanconi Anemia (DNA repair defect)



 Indian Institute of Science, Bangalore, India

Prof. Ganesh Nagaraju

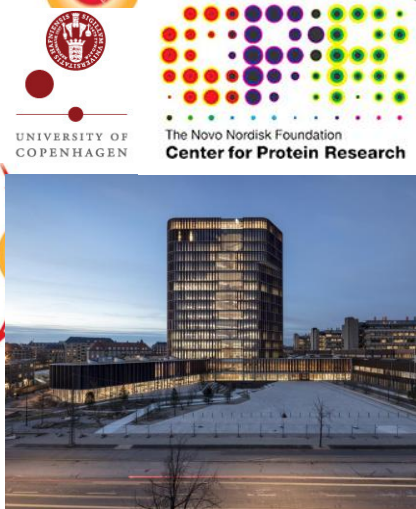


Aug 2009- May 2015
Ph.D. (Biochemistry)
DNA break repair in Cancer

Cell division

 **University of Copenhagen, Denmark**
Self renewal

Prof. Jiri Lukas

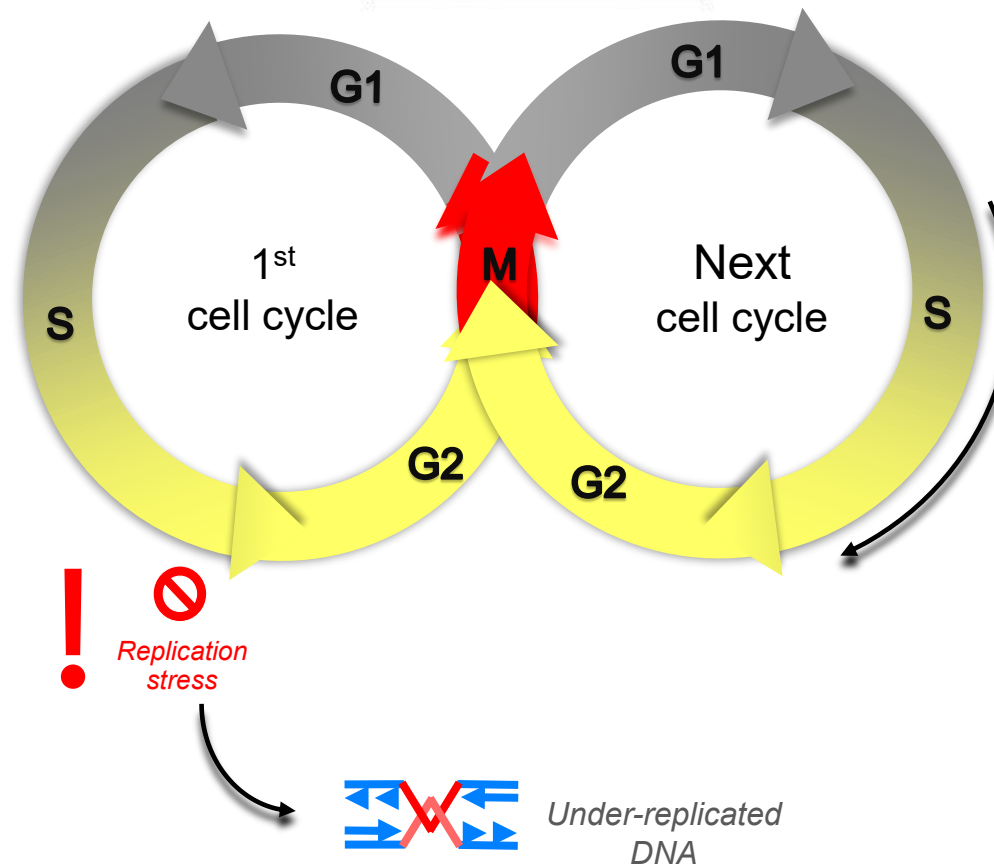
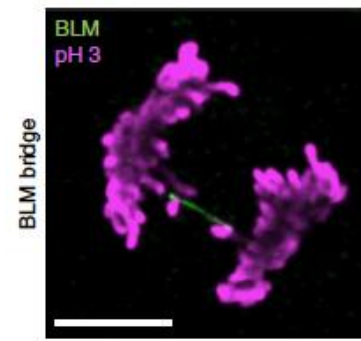


Tissue

June 2015- July 2021, Postdoc

In normal cells, cell proliferation eventually stops

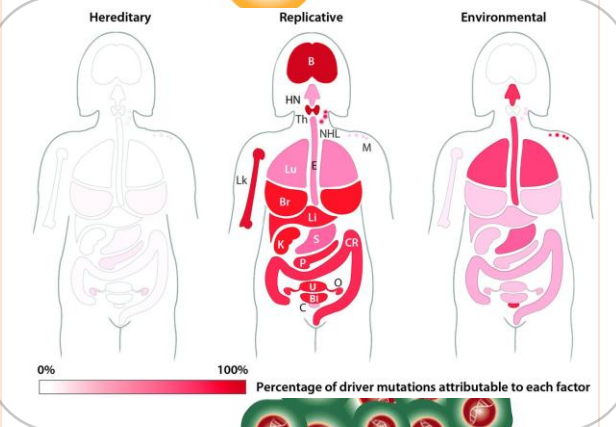
**Fundamentals of DNA replication
& Cell cycle**



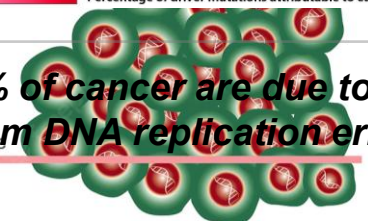
Science

Stem cell divisions, somatic mutations, cancer etiology, and cancer prevention
Cristian Tomasetti, Lu Li and Bert Vogelstein

Science **355** (6331), 1330-1334.
DOI: 10.1126/science.aaf9011



**"66% of cancer are due to
the random DNA replication errors"**



Uncontrolled Cellular Growth

How does a normal cell copy its DNA at the right speed?

How do cancer cells continue dividing despite carrying enormous amounts of DNA damage?

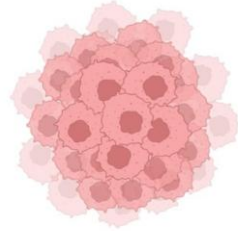
SDU  



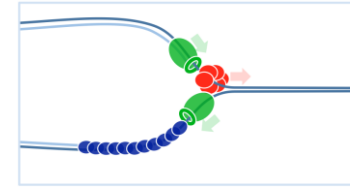
SOMYAJIT
LAB



**Cancer lines and
primary cancer tissue**



In collaboration with
Odense University Hospital &
University of Copenhagen



New mechanisms



Replication stress
DNA damage

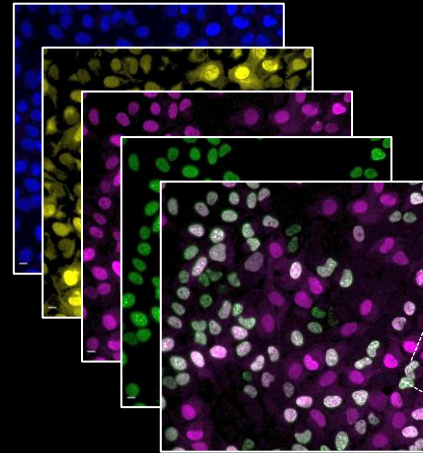


*Genome and cell cycle surveillance in
cell fate and cancer*

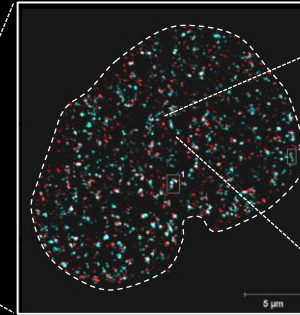
August 2021 onwards
Group Leader

Latest Findings

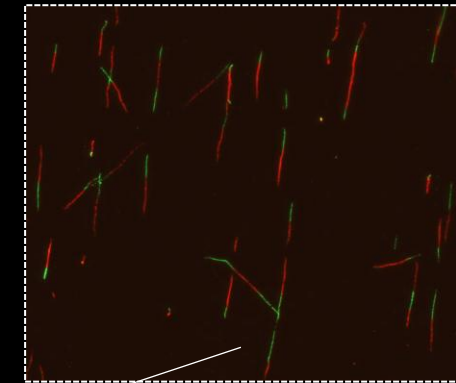
High-throughput analysis of DNA replication in human cells



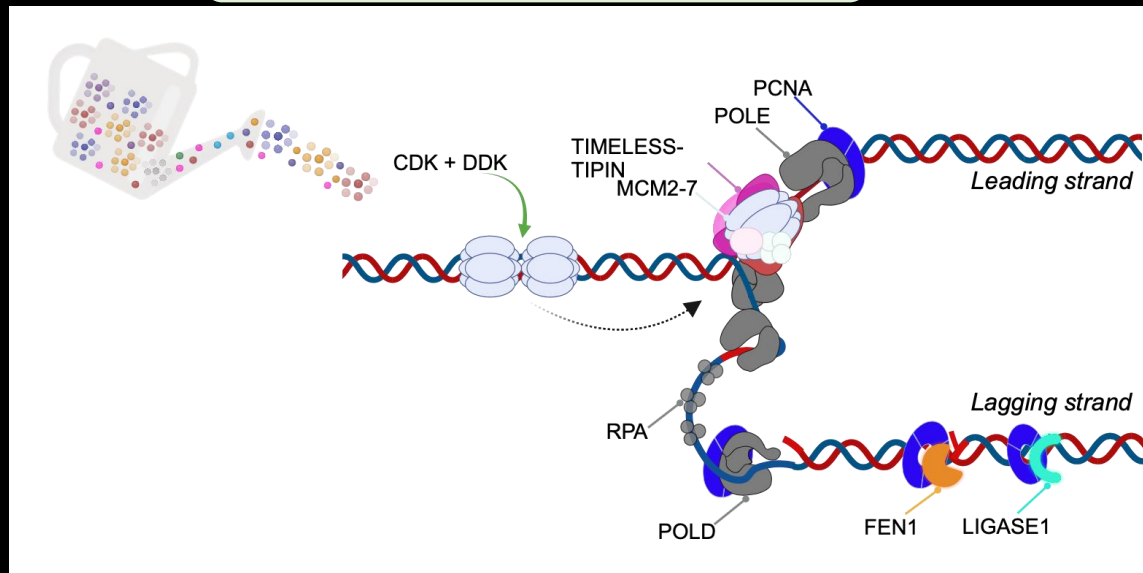
DNA replication at Single-cell level



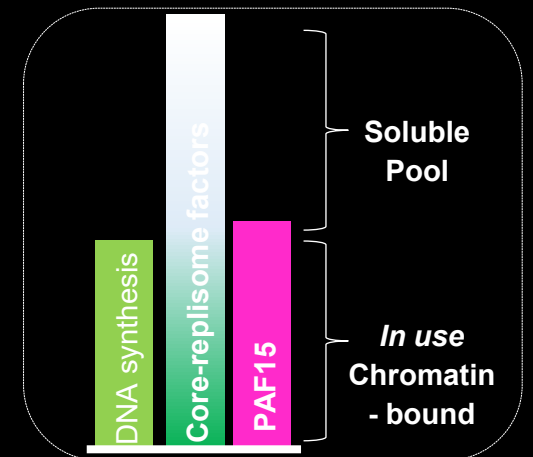
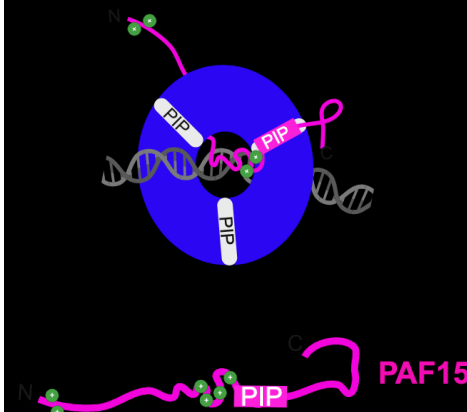
DNA replication at Single-molecule level (DNA fiber)



Rate-limitations in Human DNA replication?



Chhetri... et al *Nature* 2026 (PMID: 41606318)



Thank you!!!

SOMYAJIT
LAB



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Joanne Larsen
Hasan Sultani
Rasmus Madsen

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PhD (*Nagaraju*) and Postdoc (*Lukas*) mentors

HOD: *Jakob Møller Jensen*

