

## ***BMC-GPMLS: Distinguished lecture series***



### **Dr. Immaculata De Vivo**

## ***The Impact of Telomere Dynamics and Lifestyle Choices on Cancer Risk***

**Abstract:** Telomeres, the dynamic nucleoprotein structures at the ends of linear chromosomes, maintain the genomic integrity of a cell. Telomere length shortens with age due to incomplete replication of DNA ends with each cell division and damage incurred by oxidative stress. Once telomeres shorten to a critical length, a proliferation block is encountered where the cell either undergoes apoptosis or a permanent growth arrest known as senescence. Telomere length may therefore serve as a biological clock to determine the lifespan of a cell and an organism. Mutations in known telomere maintenance genes have been shown to cause telomere shortening, which leads to a reduced lifespan. Certain lifestyle factors, such as smoking, body mass index and stress have been found to correlate with accelerated telomere shortening, likely via increasing DNA damage. Recent studies have identified other lifestyle factors, including Mediterranean diet and physical activity, which may potentially protect telomeres and the health of an individual. I will highlight the important role of telomeres in human disease and aging in general and summarize lifestyle factors that may affect health and longevity by altering the rate of telomere shortening.

Dr. Immaculata De Vivo is Associate Professor of Medicine at Harvard Medical School/Brigham and Women's Hospital and Associate Professor of Epidemiology at the Harvard School of Public Health.

**Time: Friday, May 26, 14.00-15.00**  
**Location: Fróði auditorium, Sturlugata 8**